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Queens and the Rearing of Them

By Allen Latham
Connecticut

JAY SMITH'S article on page 51 provokes much thought. Though I find myself mostly in hearty agreement with the points brought out in this article, I shall now offer some adverse criticism.

Nature does fire blank cartridges, and many of them. Man has many times improved on Nature. Left by herself Nature produces very inferior apples, her cabbages are hardly fit to eat, and her pears would find no market. Most of the things in the way of food which we value most are natural products transformed by the skill of man.

Why then should man not rear better queenbees than Nature does? We hear so much about queens reared under the swarm impulse, and queens from swarm cells. How long are we to remain deluded? Will this fetish never die? Here and now, at the risk of much censure I declare that the idea that queens reared by the bees themselves under the swarm fever are extra fine **is all wrong.**

There may be ten cells built when a colony prepares to swarm. Of those ten cells one may throw an excellent queen, two or three others may throw fairly good queens, while the rest will be below the average of what we call good queens. If you do not believe this then try it out. I have been convinced of this fact for many years.

Until about 1900 I let my bees swarm and requeen themselves. In those sixteen years of my experience my colonies were always very irregular, running from excellent down to worthless. My small honey crop was mostly gathered by two or three of the 20 to 30 colonies. It was a rare season that the majority of the colonies stored surplus. Since the beginning of this century I have reared many queens and for years now have requeened my colonies with queens of my own rearing, leaving only such queens of Nature's rearing as happened through supersedure or a chance swarm. I am pleased to say that now I have apiaries the colonies of which are fairly uniform. True they are not all exactly equal, but they hover around a good average. So far as I can see the explanation lies almost wholly in the queens.

Then there is another fetish. We are all delighted to see a supersedure queen. We think that here is a fine queen, a super queen. We have always been taught that such queens are far and away better than any other queens. Why should they not be so? The royal cell has been tended with the greatest of care by not a few but by hundreds of nurse bees. It is stuffed with royal jelly, half an inch deep. Again I have to state that we are laboring here under another delusion.

I find it very difficult to give up my faith in supersedure queens, and must confess that I still keep optimistic about them, but allow me to offer a few observations. Many times in the past two decades I have carefully saved supersedure cells at such times as some favorite breeder was failing and the bees were aware of the fact. I have saved many such, but have to confess that so far as I can recall I never got a really good queen from any one of them. Again, I keep a record of all my queens in my seventeen or so apiaries, and when I requeen in the fall months I leave all young queens, especially taking note of supersedure queens. Each year there are probably upwards of a score of such queens.

Now were I such a notekeeper as was Dr. C. C. Miller, I could now tell you that I had during 20 years, 347 such supersedures and that 41 of them did this and 53 of them etc. But I never had the patience for such minute note taking and must give you lump results. Only very rarely has one of those supersedure queens done more than ordinary work, whereas a great many of them never did even average work. In a surprisingly large number of cases they themselves have been superseded the next year. Or in other words their life was a year or less in length.

Now we want queens that can live long even if we do not let them live long. Jay S. would have us believe that long life comes through rich feeding of the larvae, and that unnatural methods and slight interruptions in the feeding of the larvae will cause short-lived queens. Jay, that is all bosh.

Long life in queenbees, like long life in most living beings, is a matter of heredity and correct condition of the parents at the inception of that life.

I doubt if many beekeepers are cognizant of the fact that the eggs of a queenbee are not all the same. They are far from being the same. A queenbee lays eggs carrying a low vitality and she lays eggs carrying a high vitality. Now if a queenbee is derived from one of the low-vitality eggs she will be poor no matter how she is reared. If she comes from an egg of high vitality she will stand much abuse and still become an excellent queen.

Right here we find the probable explanation of the poor quality of supersedure queens. They come from eggs of low vitality. In a similar way we find the explanation of the low average of natural swarm queens. They come from eggs laid by a tired queen who is tapering off her egg-laying and is poorly fed possibly, hence those eggs are of low vitality.

More than once in the past few years I have been puzzled to know why at times I get a batch of magnificent cells the queens of which are all of the highest grade and why at

other times I get a batch of queens all so poor that I have to stretch my conscience a bit to let any of them live. Both batches of cells were, so far as I could control matters, treated alike and had equal opportunities. The process of elimination leaves but one factor to explain the difference. That factor is found in the condition of the eggs which produced the larvae which were used in grafting.

Now Jay Smith says we must use very young larvae. In another place he says this larvae may be injured by the grafting process. Well, then, if such injury is possible why use such tender larvae? I have tried batches with all ages. The use of very young larvae (larvae under ten hours of age) yields poor acceptance and in my case queens lacking in uniformity. There are more runts and more dark queens. When I use well-fed larger larvae (larvae possibly even of an age slightly under three days), I get splendid acceptance and uniform queens of good size and excellence.

I tried the double-grafting also. My experience was just like Jay's. This throws a little light. It would look very much as if bees feed larvae of different ages milk of different densities. A young larvae put into the food-bed of a three-day old larvae may be unable to take advantage of that generous quantity of food. The bees react against that abnormal condition.

I think it probably true that the bees invariably remove all the food given to the grafted larvae. That is a matter I do not feel sure of and I intend to study it further. Even though it is removed, the absence of that food for a brief time does not seem to do harm. I have had queens reared by the grafting method live into the fifth year.

If Jay Smith and others are troubled by this fact the difficulty can be overcome. **Graft with larvae which are resting.** The larvae of the bee like that of other insects has its resting periods. I have at times grafted with larvae about to make their second moult. I recall one case in which the comb from which I was selecting larvae had a very generous number of such larvae. They can be easily detected by the eye if you know what to look for. In that case I got a lot of very large queens, really larger than usual, but they never did any better work so far as I know. There is much chance for college bee departments to study along these lines. Which shall be chosen for grafting—a newly hatched larvae; one about to moult the first time; one just through with its first moult; one getting ready for the second moult; one just over the second moult; one nearly ready for the third moult or—I will go no further!

I am surprised that Jay thinks the dried down jelly in the cell is of value. It recalls Dr. Gallup and his "umbilical cord theory." Rarely, I believe, does a queen emerging under natural conditions ever enter the cell to eat that jelly. When a queen returns to a cell it is usually to tear at it, possibly with the expectation of finding a rival queen in it. I have known queens to tear an empty cell literally all to pieces. I doubt very much if they can dissolve that jelly to any great extent, but I am ready to believe.

Now a few words about getting queens to lay in cups. Shall we gain anything by it? Can we get a queen at her best to lay in cups? Only failing queens or tired queens naturally do this. Suppose we succeed, can we succeed at any time or will the time be limited to a brief spell in June possibly? When we get such queens they will have cost us so much, what can we do with them?

Already queens are being sold so low that we Northern beekeepers find it hard to compete with the Southern ones. They lose money, but we lose more money. Instead of creating a more expensive process of rearing queens we are forced to seek every device which lessens cost. Beekeepers will buy where they can buy at lowest prices and you cannot prevent it. You said a lot of good things in that article Jay, but you are barking up the wrong tree.

Hurrah, Sic 'Em, Tigue!

Wouldn't it be grand and glorious if the grading rules the northern beekeepers have put across would turn out to be a boomerang on them! According to the work of Dr. Schuette, (as you note in the editorial "That Dark Honey," page 47, February) it is found that darker honey contains more minerals and, therefore, may have a greater diet value than honey of light color.

Geo. Harrison, Virginia.

[Well, well, well! We really will have to object, Mr. Harrison, when you say that the grading rules were "put across by northern beekeepers." That is not true. Whatever preference is evident for "white" in honey is **a demand of the consumer, not of the producer.**

Every beekeeper, of course, will claim his honey, whatever its color, wherever he is located, to be the best honey in the world. That's perfectly natural and rather to be commended The fact remains, however, that, outside of local distribution, honey which finds its way to the larger cities, must meet the demands of consumers, who all say "white honey." This is reflected through the buyer to the beekeeper. Believe it or not. An easy way to prove it is to try to sell dark honey in New York or Philadelphia. —Ed.]

THE HUMAN PUZZLE

Who Is He?

Not so many guesses this month. A total of thirteen. If there's luck in numbers, there may be twenty-six this time.

Just drop us a postcard, and tell us who the above gentleman is. Who is he? It makes no difference where you live. If you guess wrong, it doesn't count and if you reply quickly you may be among the first three correct and we will send you a book on beekeeping.

The May "Who Is He?"

E. G. Carr, State Inspector for New Jersey and beekeeper.

Guesses were received from New Jersey, Missouri, Arkansas, Indiana, New York, Ohio, Illinois, Iowa. The first three, and winners of the bee books, were: Penn G. Snyder, Dayton, Ohio; P. F. Dalrymple, Dayton, New York; Adolph Loehr, Bronx, New York.

Mr. Carr must resemble a good many other people because here are the ones for whom he was taken—Mel Pritchard, queen breeder of the A. I. Root Company; Frank C. Pellett, Associate Editor of American Bee Journal; Jay Smith, queen breeder, Vincennes, Indiana.

Now, get out your postal cards and tell us who the Human Puzzle is for this month.

I Say Treatment Doesn't Pay!

I say comb treatment doesn't pay ("Does Any Comb Treatment Pay?" —Bruce Morehouse, March, page 79). I used 200 pounds of chlorine gas on old combs. If it is a success, you surely have got to show me.

I had over 200 hives which I had lost with foulbrood. I just had to force my bees to work on the combs and they cut me short at least 3000 pounds of honey.

My advice is burn all the combs, gasoline fire your hives and bodies and put in new frames and foundation and start again.

W. A. Brown, Illinois.

[Melting the comb with plenty of water is a safe way and produces a lot of good beeswax.—Ed.]

To Officers of State Associations

At our annual meeting held in St. Louis in March the following resolution was passed:

"Whereas, The American Honey Institute is the greatest and most important project before us at present, to which the whole beekeeping industry should lend its support in order to **guarantee its continuance**

BE IT RESOLVED, That the American Honey Producers League go on record as supporting the American Honey Institute to the limit of its moral and financial ability by placing its officers at the disposal of the American Honey Institute and by contributions of both services and money, and

FURTHER BE IT RESOLVED, **That a committee be now appointed to arrange for key men in every beekeeping area to solicit funds for the Institute."**

After many conferences and deliberation on this problem of appointment of key men, I have decided to appoint all state association secretaries and presidents to make up the Committee whose main function will be to arrange for key men in their own state to act as Honey Receivers.

Will you get in touch with the secretaries of your local associations and have them seriously consider this matter of getting more Honey Receivers. Every county should have one person willing to help with this work. Mr. Parks, Chairman of the Institute Finance Committee, informed me only this week that there are many states without even one person as an Institute Receiver. The League is determined to do all it can to get funds for the Institute and is asking every state association officer to earnestly consider this means of securing funds to the extent of appointing key men in his county or sectional groups.

I have the special privilege of seeing with my own eyes the ever increasing demands made on the Institute staff for service. I know the work of the Institute is making beekeeping a bigger and better industry. If its educational program can continue, our industry WILL get somewhere. When I say that the Institute is meeting a great need in the development of our industry, I am making that statement on what I have seen in the incoming and outgoing mail for my headquarters are at Madison. You'd say it too if you could see the hundreds of ways the Institute staff serves the public and the producer.

I ask you with the full support of the League organizations, WHAT WILL YOU DO AS A STATE OFFICER TO GET INSTITUTE RECEIVERS IN YOUR STATE?

Sincerely,

JAMES GWIN,
President,
American Honey Producers' League.

Varying Results With Bees in Pollination

Mr. Hull's article on pollination in the February number has been criticized, particularly because it was suggested there that small colonies of bees will suffice for pollination use. Criticism also makes the assertion that many orchardists who have used bees, frequently have not gained much in comparison to the cost.

It has been recommended, particularly in material from the Cornell University, that only exceptionally strong colonies are useful for this purpose and it is a question whether in most places it is possible at this time of the year to get colonies which are as strong as the recommendation has suggested.

The question is raised among orchardists generally as to whether or not bees pay, one year with another. In some cases it is quite evident that they are of little benefit. In others, it is equally evident that they are of great help to increase the fruit crop.

We agree with the criticism that to get colonies of the strength recommended by Cornell,. would be very difficult at the time of fruit bloom. We are inclined to agree with the experimental answer of Hutson, while he was at the New Jersey experiment station, that the average over-wintered colony is only a little better than a three or four pound package of bees. The special orchard packages furnished by breeders should be of a strength equal to most colonies at the time of fruit bloom.

We have had a hand in pollination work because there is a fair sized orchard here owned by L. C. Dadant, where bees are used each year for pollination purposes and, at different times, we have helped supply bees for other commercial orchards. At one time we helped install 500 colonies in a 2000 acre block in Illinois. The increase in some varieties from the bees was decided and noticeable, while in others there was little difference.

Much depends on the provision for cross pollination by planting suitable pollen bearing varieties. The experience of Stark Brothers in Missouri is worth citing. In a new orchard of Golden Delicious apples, provision was made for pollination by planting every fourth row to the best pollen variety obtainable, considering both the efficiency of pollen, time of bloom and so on. Then, with bees placed at proper intervals, a marvelous set of fruit was secured, which has been repeated consistently. On other occasions, however, in other orchards using bees without thought to pollinating varieties, these results were not secured. This lack is a common one in commercial orchards.

The success in securing proper flights and a proper bloom distribution of bees, lies in placing the hives at suitable distances in the orchard for minimum flight.

We have worked with even smaller colonies than those proposed by Mr. Hull with results which seemed to be satisfactory. It must be admitted, however, that colonies of greater strength are desirable whenever it is possible to get them.

G. H. Cale.

Honey Low in Hollywood

One of our good subscribers, G. J. Fifield, of West Hollywood, sends us clippings from several of the local papers giving some idea of what the cut price artists are doing for honey in that high-toned place of Hollywood. We find honey is advertised there in 5-pound pails as low as 29 cents and 30 cents. At that rate, the movie stars ought to get "honey conscious." At the same time, everything is not going along at this rate as we notice from another clipping that the orange honey producers are forming a combine to sell their honey at a better figure. Orange honey, of course, has a special flavor and a special market.

California as a whole has disposed of its honey in pretty good fashion during the past year. Heavy rains in practically all sections of California seem to insure a better honey crop than they have had for a number of years.

The Drifting of Honeybees

By C. L. Corkins
State Entomologist
Wyoming

KING, in the April, 1932, issue of this journal, set forth the results of drifting experiments, which indicated that this problem is very large in apiary management. Drifting of honeybees is so important in the proper evaluation of production records to commercial queen breeders, research workers and those commercial beekeepers who practice selective breeding that it seemed imperative, in the light of meager statistics and questionable technique, to check King's results. Hence, my work during the summer of 1932 was devoted entirely to a drifting experiment. Although it is important that such experiments be conducted still more extensively, the results obtained are of sufficient value to report at this time.

The method used in determining the drifting records was to use two different races of bees of different colors, namely Caucasians and Italians. The Caucasians were of the Rauchfuss strain and were uniformly dark gray in color. Each colony was headed by a select tested queen, which had been chosen for the uniformity of the color of the offspring. The Italians were of the Burleson strain and varied in color from three yellow bands to almost golden. With the exception of five packages which were received just prior to the beginning of the experiment, the Italian colonies were chosen out of the general apiary with respect to the uniformity of the color of the bees. Of the six packages, two were later found to be hybridized, and eliminated from the experiment.

The method chosen to determine the drift between the two races of bees was that of taking a random sample and counting. In order that a statistical analysis might be made, 1,500 bees were taken in each sample. The samples were taken once weekly, except when sampling unduly weakened the colonies. In these samples, a total of 237,000 bees were taken and counted during the season.

The total number of colonies entered in the experiment was 22. They were distributed in three different yards, under three different sets of conditions.

The University Yard

The University yard was made up of five two-pound Caucasian and five two-pound Italian packages started together, with the hives of each race alternated and placed as shown in the illustration. This apiary was located on a wind-swept area of the campus, with no windbreak.

The University Yard.

The Bosler Yard

Sixty-six colonies equally divided between Caucasians and Italians were placed in a small enclosure, located on the prairie with low growing shrubs as the only protection. Six colonies, placed alternately between the two races, in the center of the yard were used for the drifting records. It was thought that this yard was in a condition to produce maximum drift. See illustration.

The Pahlow Yard

Only six colonies were placed in this yard, alternating between Caucasians and Italians. They were over-wintered colonies of unequal strength. A good windbreak was provided and the conditions made for minimum drifting. See illustration.

The experiment was carried on under fairly windy weather conditions. The average total number of miles of wind per day during the three months of the experiment was 241.

As the data were gathered especially for and analyzed by technical statistical methods, only a brief, popular account of the results will here be given. Anyone interested in the data themselves is referred to Bulletin 190 of the Wyoming Agricultural Experiment Station, Laramie, Wyoming.

In this experiment, two types of

The Bosler Yard.

The Pahlow Yard.

drifting must be recognized, first, drifting from a colony of one race to a colony of another race, or "interdrift," and, second, drifting between colonies of the same race, or "intradrift." The results here obtained are for interdrift, only, as the method would not apply to the gaining of intradrift records.

The important results of the experiment were:

1. The mean percentage of drift of all colonies for the entire season was 2.21 - 0.03. This figure is very low and the probable error is so small that it indicates great reliability of the data.

2. The mean of the means of the drifting of each colony each week, excluding the original data of the two colonies later found to be hybridized, was only 1.77 - 0.06%. This figure had a standard deviation of only 1.01%. Putting this in common, every-day English, it means that not only was the drifting very small, but that it was just about the same amount in each and every colony. This would indicate that regardless of the percentage of the drift, individual colonies do not gain or lose much in relative strength.

3. This point was further brought out in a study of the difference in the tendency of the two races of bees to drift. There was scarcely any significant difference in the amount of drift between the Caucasians and the Italians. There was just a slight tendency of the Caucasians to drift more than the Italians.

4. There was no indication of any significant difference in the tendency of weak colonies to drift more than strong colonies. This result would seem to cast doubt upon one of our old, pet theories of drifting, namely that the weak get weaker and the strong get stronger.

5. There was absolutely no significant difference in the amount of drifting in the three different yards. The crowding of a large number of colonies into the Bosler yard did not tend to increase drifting.

These records clearly indicate that if ordinary care is taken in establishing a yard to avoid immediate confusion, there is little danger from excessive seasonal drifting thereafter. There may be some conditions under which the drifting problem may be greater than here indicated. If so, such can undoubtedly be solved by a good windbreak.

The important point is that those who are using individual colony honey production records as a basis for selective breeding need not be discouraged from this course because of drifting. To me, it seems very important that selective breeding operations be encouraged and increasingly extended among commercial queen breeders and commercial beekeepers. In this practice seems to lie the greatest hope for maximum progress in the now extremely important field of decreasing the cost of production of a pound of honey.

Where Are We Going?

Such a howl about honey prices this year! Section honey selling as low as five cents. Extracted honey at New Orleans reported at 25 cents a gallon. Honey from California offered in Chicago at 4½ cents. Wherever the producer has had to sell through wholesaler, broker or commission man prices have been extremely low. In many instances where the beekeeper has sold his own honey, he has had to take a price about equal to the wholesale price. There has been much dumping of honey because the need for money was so great, it must be obtained at a sacrifice.

This has made for extremely cheap honey and so honey has been consumed in surprisingly large amounts and the interest in honey has been greater than for a number of years. When honey reaches the level of inexpensive syrups, people use honey in preference because as a whole they recognize the merits of honey in comparison with other sweets. We have the spectacle, therefore of cheap honey selling readily and rapidly while honey held for a higher price is not moving.

What is the reaction among beekeepers to this situation? Many letters which come to the desk show that the beekeeper has suffered less and has more available money than most farmers. It is probable that the outfit and equipment for beekeeping depreciates faster than most farm equipment and when depreciation, interest and labor are considered, it is quite likely that many beekeepers have actually sold at or below their cost of production. Not figuring these things, however, it is easy to assume that the cash in hand gives the beekeeper a decided advantage over his neighbors. The majority of letters show satisfaction with the situation and the tendency is to increase the number of bees and to increase the amount of honey produced.

Beekeeping like everything else responds to the law of supply and demand. The demand for honey at a low price is now good. Honey at a high price will not sell simply because people who want the honey do not have the money to pay for it. As a result, beekeepers who have succeeded in selling at low prices, say that they are going to keep more bees and get more honey, to increase the volume so there will be enough honey to sell at the low price and still be able to live. Will this bring on still lower prices?

At any rate, it will make beekeepers seek to produce honey at the least cost. There are men who do produce honey below the price at which it must now sell and probably more can do so if they make up their minds to it. The truth of the matter is that not enough beekeepers have felt the pinch of things to the point where they will sit up and take notice as many other farmers are doing.

Since the bulk of production is running to extracted honey, what is to become of comb honey? One year with another, there has always been a good demand on many markets for quality section honey and it is probably true that most people when they think of honey still think of it as in the comb and not as liquid honey in a pail or a jar. They have confidence in comb honey.

It is certainly hoped that comb honey will keep a price advantage and that it may remain in the class of things for which people expect to pay more because it is a grace and a satisfaction to possess it. Here and there we see beekeepers who enjoy a profitable and exclusive market for a special product—well graded fancy comb honey. In many instances, of course, they have spent years to build this market and they feel that it is theirs by right of effort. They realize that, to keep it they must continue to supply it with the very best of comb honey. They are now in a position to enjoy a certain advantage.

There is no doubt that the surprising interest in honey this year is in part a reflection of the work of American Honey Institute and the results of contact started in many states from the approaches of the Institute. The demand may be due in part to a small fruit crop and the need for some other sweet. Beekeepers should do everything possible to continue this interest. It is of the most hopeful things in present day beekeeping.

There are a good many beekeepers who think that it will be a decided blessing in the end to be able to furnish inexpensive honey until the use of it has been made more general and the interest has been increased to a high point.

G. H. Cale.

Honey Muffins

Two cups flour, 1 cup sweet milk, 2 teaspoons baking powder, ½ teaspoon soda, 1 teaspoon ginger, ½ cup honey, ½ cup grated cheese. Mix ingredients all together and bake in a hot oven (400 degrees) for about 15 minutes.—Mrs. Benj. Nielsen.

Rearing Worker Bees for the Honey Crop

How early before the honey crop must the field bees be reared? This is a question that too few beekeepers ask themselves.

It takes two weeks for a worker bee to become a field worker, after she has emerged from the cell in which she was reared. It takes twenty-one days for the egg laid by the queen to emerge from the cell as a worker. So it takes about five weeks to produce field workers to harvest a crop of honey. Thus if your honey harvest is likely to start on June 15th, you must calculate upon having the heaviest of your breeding by the first of May. Figure upon your honey crops in that way and you will be sure to have bees at the right moment.

Boost the Institute -- Support It

A personal letter from E. R. Root, new President of the American Honey Institute, gives us an idea for an editorial on this subject. Mr. Root has recently made a visit to the American Honey Institute headquarters and came back astonished at the amount of work that is being done there.

Ordinarily we think of the American Honey Institute as forming connection with allied industries and users of honey in a big way but we do not realize how much stenographic and investigational work is necessary to take care of the correspondence and the inquiries which are coming in every day to the Institute and its two efficient operators Mrs. Malitta Fischer Jensen, Secretary-Treasurer and Miss Lavonne Taylor, Assistant in Charge. Every state and many foreign countries are represented in the requests which come in for information of every type to the office at 417 North Few Street in Madison, Wisconsin.

When you realize that the publicity for honey through the efforts of the American Honey Institute have brought demand from housewives, bakers, confectioners, dairymen everywhere in this big country of ours, you will see that the answering of the requests for information are something of a problem.

For instance, this office had a request for a honey label made up of recipes for honey and sent it in to the Institute. The answer came right back with recommended recipes even though we knew the Institute was crowded for funds and for time to answer all inquiries.

The Institute has come through the depression so far largely through the efforts of the allied trades and of a limited number of much interested beekeepers. It is now up to the rank and file of beekeepers to show their appreciation of the Institute and what it may do for the honey industry in the future as well as it has done in the past not only to sanction this organization as well worth while but also to sanction it more directly by support.

$1,00, $2.00 or $5.00 subscribed by every commercial beekeeper in the United States would make a fund which would make for efficiency and in the end, lead to a greater demand for honey.

Let us not now at this critical time fail in our support of this worthwhile institution. Send your subscription directly to the Institute and make them as large as you can.

Choosing a Location

Since there is so much variation in the bee pasture in locations but a few miles apart it is important to study the flora very carefully when placing an apiary. Often it becomes necessary to choose between a location with large acreage of a major honey plant but which is deficient in spring pasture and one which has a smaller acreage of the main crop but better pollen sources.

The writer has in mind two locations not far apart. In one there is a large amount of sweet clover within flying range of the bees but few flowers open for spring brood rearing. In the other there is an almost continuous supply of pollen available throughout the summer, a reasonably good acreage of sweet clover for the main flow and a heartsease flow in late fall to fill the brood chambers for winter.

It is an open question as to which location will prove the most profitable for a ten year period, but the one with the greater variety of sources is the safer one. With good spring forage there will be less bother with spring attention and the fall flow will save much late feeding in preparation for winter. In such a location the main harvest can be much smaller and still leave a larger net profit. Feeding to carry the bees over periods of scarcity is expensive at best.

The King Bird

Every year in midsummer the question arises as to the amount of damage done by the king bird in the apiary. It is one of the flycatchers and takes its prey on the wing. One seeing it catching insects in this manner may readily assume that it is a serious menace to the beekeeper. There is good reason to believe that the greater part of bees caught are drones. Quinby called attention many years ago to the fact that it was most active in the afternoon when drones were in flight and that it seldom took many bees in the morning. Most observers who have looked into the matter have become convinced that the bird is unjustly called "bee martin." Its service in the destruction of noxious insects entitles it to protection.

Empty Combs

Do not give natural swarms partly built combs and partly empty frames for they will be likely to build drone combs in the empty space. The only way to use built combs is to use a hive full of them or else to give them one at a time, to nuclei. The bees will build worker comb as long as the queen is short of room to put her eggs. But when she is ahead of the building, the workers will take advantage of this to build drone combs which require less time and less material than worker combs.

The Big Hive

It is very significant that practically all American beekeepers have accepted the principle of the big hive. Those who formerly objected to the Dadant-Quinby dimensions now admit that the single Langstroth hive body is too small. Instead of admitting the superiority of the larger hive, however, some now advocate the use of two Langstroth hive bodies for a brood chamber. By so doing they overlook the inconvenience of a divided brood chamber and also the extra cost of two hive bodies instead of one.

The most surprising development of this changed attitude is the contention that the Dadant, or Jumbo hives are too small. After hearing so long that they were too large, it is rather astonishing to hear it said by the same persons that they are now too small.

While the two-story Langstroth hive serves to provide ample room for brood rearing, in practice its use entails much labor because the queen moves into the upper chamber and refuses to come down again. It thus often becomes necessary to take the hive apart and set the lower empty body above the one in which the queen is laying. If it were not for this perversity on the part of

the queens the double hive idea might serve the same purpose as the large hive all in one brood chamber. In practice one has only to use hives of both kinds in equal numbers to discover how much extra labor is necessary for securing the same size crop with Langstroth equipment. One will also discover that there is decidedly less swarming with the one big brood chamber instead of two smaller ones.

Progress Is Slow

What fantastic ideas were prevalent a generation ago! In the old literature we find Quinby defending the bees against the charge that they were responsible in the reduction of the crop of buckwheat. In that day many farmers seeing the bees at work concluded that they took something from the plants and thus reduced the crop. Now it is very generally understood that the bees are responsible for an increase rather than a reduction because of the better fertilization of the flowers on which they work.

We also find Charles Dadant defending the bees against the charges of grape growers. In this case it was assumed that the bees were responsible for the cracking of the skins of the fruit when they were found sucking up the juice. Later it was found that the injury was caused by the weather or by wasps or birds and the bees attracted to the plentiful supply of sweet carried away the exposed juice.

Artificial Increase

Since natural swarming has so largely been done away with by commercial beekeepers who depend upon divisions for increase we read with much interest the perplexities of the old timers with relation to "artificial swarming" as they called it. Before the days of commercial queen rearing they were at a great disadvantage in securing extra queens. They could only make divisions safely when queen cells were present in preparation for swarming or supersedure.

Quinby wrote that in his opinion it was unsafe to make artificial swarms at any time except the swarming season. He said further: "To make such swarms at any time when the bees are destroying drones would be extremely hazardous, not only on account of the young queen being impregnated, but massacre of drones denotes a scarcity of honey."

Information Brings Demand

Interesting reports continue to come in concerning the great increase in the use of tomato juice and saur kraut juice as a result of the discovery that these products are rich in vitamines. Mention has previously been made in these columns of the great demand which was developed for liver when doctors announced its special value for certain diseases. Likewise we have told of the enormous increase which came in the market for carrots when the public learned that is a rich source of certain vitamines.

We are very confident that when all the facts are known about honey, the industry will have a period of great prosperity because of increased interest on the part of the public. Several investigations are under consideration which aim to bring the facts to light.

Honey in the Diet

It is generally recognized that honey is a natural and healthful food but the tendency to recommend it to everyone how is sick regardless of his ailment is dangerous. While patients with some forms of diabetes seem to tolerate it, to others it is as dangerous as sugar. The only safe way is to depend upon the advice of a capable physician. In some forms of stomach trouble, honey is objectionable. Honey contains acids that make trouble for some patients. In our enthusiasm for our own product we must not make the mistake of making unsupported claims. The study of food and its effect is still in its infancy and specialists are bringing new facts to light. The beekeeper will do well to make sure of his authority when making special claims for honey.

Weather Contrasts

Two letters written the first week in April offer a remarkable contrast in conditions. One written from Manitoba stated that roads were still blocked with ice and snow with the bees still in winter quarters. The other from Louisiana stated that the weather was balmy with white clover in full bloom and the bees storing honey.

At first thought one would expect the Louisiana beekeeper to get the larger crop, but because of the longer breeding season the bees consume more honey in colony activities. It is a rare season when the southern beekeeper gets as much surplus honey as his northern cousin.

The package business is a very natural outgrowth of this difference in climate. Bees can be reared much more economically in the south and honey produced more profitably in the north. Both northern and southern beemen profit by the development.

Inspection Problems

The failure to provide sufficient funds for inspection in several of the states offers a very real problem to the beekeepers. In the states where no educational effort has accompanied the inspection much of the work done in the past will be lost. Where a vigorous educational campaign has been carried on it is probable that the beemen will be able to keep disease under control.

Merely destroying disease as found has reduced the danger for one moment, but it has not provided any barrier to prevent its return. Where the rank and file of beekeepers have been taught to look out for themselves permanent progress has been made.

It now seems doubtful whether it will be possible to secure the former appropriations for some years to come. In the meantime it will be necessary to meet the problem in some other way. Cooperative effort on the part of the beemen may be necessary.

Sweet Clover Yields

The article by Prof. Mitchener in the May issue of this magazine is a very striking evidence of the remarkable yields of honey which are secured from sweet clover under favorable climatic conditions. It seems incredible that the average yield per colony for a nine year period for an entire crop reporting district could be 191 pounds. Another district showed an average yield for a like period of 160 pounds per colony. It is significant also that in localities in Manitoba where but little sweet clover is present the yields are little if any larger than in the ordinary location farther south and east. As we go northward the longer days of summer intensify the honeyflows and compensate for the shorter season, but this article provides the evidence that the greater part of the prosperity of the beekeeper of the northwest is due to the large acreage of sweet clover within reach of his bees.

The gradual extension of sweet clover as a forage crop over the eastern states offers hope of better yields than have been common in the past. There is little possibility, however, that such yields will be secured in the humid regions, for sweet clover is at its best in the Northern Plains.

The man who is located where he can depend upon a yield of 160 to 190 pounds of honey per colony is not seriously inconvenienced by low prices such as would be disastrous to the ordinary beeman.

Bees and Fruit

As this is written the fruit trees are in bloom while the weather is cold and wet. Some blossoms are fading with only a few hours warm enough for the bees to fly. If this condition should be general this year it should give a good demonstration of the value of the bees. Where plenty of bees are present good pollination may be secured with but a brief period when they are able to fly. Where honeybees are scarce it may be expected that the set of fruit will be light under such conditions as prevail here during the blooming period.

A Melting Tank and Furnace for Wax Rendering

By Frank Beach
Idaho

I RECENTLY read a short article in one of our prominent Bee Journals; that there is no practical way of separating the wax from the refuse without a press.

The use of the press has been one of the most trying jobs I have had in the work of the apiary. I have made diligent inquiry to learn of a better way and without the use of a press.

The use of a press, to be efficient, takes more than one man to operate. I have rendered wax when three men were fully occupied. One man running the press, the other feeding the fire, sousing the combs in the water removing the frames and charging the tank with more combs and water.

Wax working is best done on a hot day, and a hot day and working around and over a hot fire is not a pleasant occupation. So if there is a better or more comfortable way to extract wax from combs and cappings I am ready to observe and try what seems easier and better.

I have found a better way. A method that can comfortably be done by one man, and leisurely done at that. Leisurely done appeals to a man after the gray hairs show over the ears. The method extracts the wax as fast per man as the commonly used wax press method.

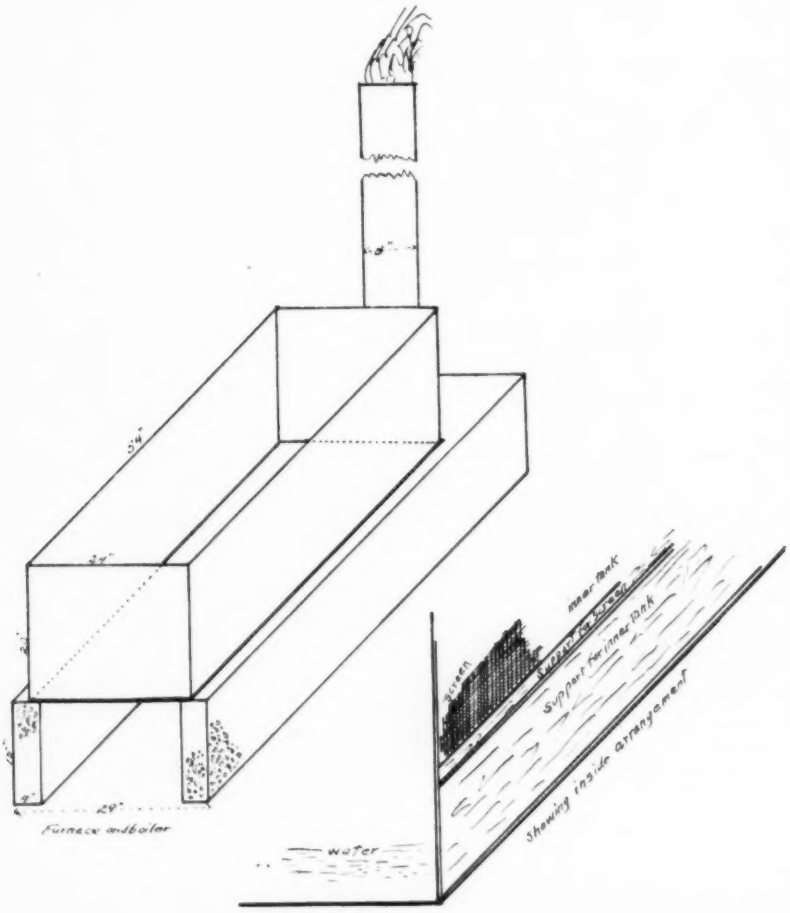
If one has a steam boiler of sufficient capacity, the use of the steam from the boiler is the most convenient method. It is more easily controlled, and operation begins as soon as the steam is turned on. The tank is used with either the steam boiler or with the furnace. The melting tank is necessary with any method used, the press method, the steam boiler, or the furnace, and the expense of the tank and furnace is much less than when a large press is purchased.

The size of the tank used would depend upon the amount of work to be done, or say, the size of the apiary. It is desirable to have the tank of a size to allow of the placing of a super with combs inside the tank or as many supers in a row as desirable, or according to the capacity wished.

These could be placed in a double row, and double decked, one above the other, if a large capacity is desired.

For the purpose of illustration we will assume a capacity for a small apairy. We have a tank wide enough to take a super 20 inches long, and long enough to include three supers 16¼ inches wide, with room to spare for convenience in handling. Such a tank might be 24 inches wide and 54 inches long and 15 to 20 inches in depth.

The furnace can be made of concrete, brick or stone with inside dimensions of 21 inches wide and long enough to support the tank and allow for a smoke outlet in the rear. The tank being 24 inches wide would have a support of 1½ inches on each side on the walls of the furnace. A furnace 14 to 15 inches high would give ample room underneath and also bring the tank to a height that would allow convenient working without too much stooping on the part of the attendant. The outlet for the smoke hould be sufficiently large to allow a prompt "get away" and thus aid in getting a good heat up quickly. I use an eight-inch pipe and have found it ample.



This furnace will allow the use of most any bulky fuel, old boards, cord wood, knots, pieces of wood that are too tough to work into stove wood size. I use sage brush and find it to be the best of fuels for this purpose. It is easy to get. The brush makes a hot fire and can be fed into the furnace whole. My advice to use sage brush for fuel is in line with the advice given to use leaves for packing of bees. You in the humid country do not have the sage brush, and we in the desert country do not have the leaves.

The inside arrangement is important for the proper working of this wax extractor. The bottom of the tank is covered with one to two inches of water, and this water is renewed each hour or at the time of the removal of each batch of slumgum. Inside of this tank one or two inches above the water is placed a receptacle or tank with sides three inches high and in dimensions about one inch less in width and length than the outside tank. This inside tank collects the melted honey and wax. This tank is supported on a wood frame with one side and end higher than the other side and end, giving the inside tank a slope to one corner. Near this corner a hole is made in the bottom ¾ inches in diameter, a tube ¾ inches long of the same size as this opening is soldered on the under side. This tube

fits snugly into an elbow and pipe of the proper size which leads outside of the tank beyond the wall of the furnace where it conducts the melted honey and wax into a capping boiler or other receptacle. This pipe is held firmly in the tank with lock nuts which also seals the outlet except through the pipe.

Inside the inner tank is placed a heavy galvanized wire screen of about 8 meshes to the inch, this screen is of the same dimensions as the inside of the inner tank and supported by a wood frame one-half to one inch above the inner tank to allow free flow of honey and wax through the screen and toward the outlet.

A cover for the tank is made of flooring, which is given several coats of hot linseed oil, at sufficient intervals apart to allow thorough drying of the oil and the sealing of the pores of the wood. If this is not done the wood will warp and allow the escape of the steam. Around the edge of the cover cloth is tacked to act as a cushion and help to seal in the steam.

We are now ready for operations. The tank is supplied with one to two inches of water over the bottom, the supers of bum combs are placed within on the wire screen, the cover put on and the fire started. Within a short time the water is boiling and the steam is permeating every cell and part of the inside of the tank. It is this live steam that melts the honey and wax. So we must have a good fire going, and a constant liberal supply of steam. The honey is first melted, and finds its way to the corner outlet and thence into the capping melter boiler. Soon the wax begins to flow in a beautiful yellow stream. In twenty minutes to half an hour the wax ceases to flow. The cover is removed, and we are careful about this for the hot steam comes into one's face if they stand in front of the cover, so we have rigged up a pulley and rope arrangement that allows the cover to be raised from a distance. As soon as the steam has cleared away, we put on a pair of canvas gloves for protection from the hot frames and slumgum. The frames are shaken inside on the screen while they are hot, the slumgum drops off leaving the frames with the wires undisturbed and in shape for the reception of foundation, except those that already were loose in the old combs, and these only need tightening. The frames and supers are removed. The hot steam has disinfected them and they can safely be used again. The frames are later run through lye water and thoroughly cleaned and seem about as good as new.

After the removal of the supers and frames the slumgum on the screen is taken out with a shovel and thrown near the front of the furnace. As soon as it becomes dry it makes a fine fuel.

The tank is now ready for a new charge, water that has evaporated is renewed, some more supers of old combs are put into the tank, the cover placed on, the fire built up, and the process continued.

The time consumed is one hour from the filling of the tank until the tank is again filled. It is important to have sufficient water in the tank so that it does not all evaporate and ruin the tank, and that steam be plentifully supplied during the time the combs are in the tank.

While the batch is heating the honey can be canned, to be later boiled and fed back to the bees; the wax dipped off into proper receptacles and set away to cool. There is still a little time for rest and meditation.

Should the wax become too cool for dipping, put it back into the tank and it will soon return to the boiler melted.

This tank and furnace is fine to melt up cappings, and the remelting of the wax from the capping melter is clear and runs into suitable molds.

You will notice that in the use of this tank there is no cutting out of combs, the frames are put in entire, the wires are not broken, the frames are clear of wax and after rinsing in hot water or lye water, are ready for use. There is some slumgum sticks to the combs and that is the reason for the extra boiling. The furnace and the tank can be used for this boiling by removing the screen and inner tank and putting a wooden plug in the outlet pipe, and filling the tank with water.

Do you get the wax? The action of the steam makes the wax very liquid and it flows freely. The wax comes out of the cells and down the midrib, the cocoons of the slumgum, part at the midrib, the wax is gone. The screen allows the wax free flow and keeps back the slumgum, the inner tank carries it to the outlet without obstruction.

The pressing of the hot slumgum in the hands fails to show wax in the creases. The slumgum when dry burns readily but this is not due to wax content.

I wanted to know just how efficient this method is. I cleaned my tank of all wax, and treated 300 standard Hoffman frames of old combs and again cleaning up I weighed the resulting wax and obtained 74 pounds of clean wax, an average of 3.95 ounces to the frame. Had I gotten one more pound of wax, or 75 pounds I would have had exactly 4 ounces of wax to the frame. I think this is as efficient as can be done with any wax press ever made.

When the furnace is used for the melting of foulbrood combs, it is safer to make a building in which to house it. I built a building 12x12 with a furnace near one side and from the top of the tank up for a distance of three feet, I covered the side with window screen to a height of three feet. This gives ventilation and fresh air and keeps out the bees. When I find a diseased hive is killed, the hive is stopped up, the supers stapled together and all moved into this house which is bee tight. The dead bees are thrown into the furnace and the supers run through the tank. You will notice that I already have said that the slumgum is burned. This burning takes everything that is diseased, and kills the germs.

It saves all the honey and all the wax, disinfects the frames and supers, and saves the wiring of frames and consumes all the refuse. The building being separate and bee tight makes the operation safe.

Nature Ramblings

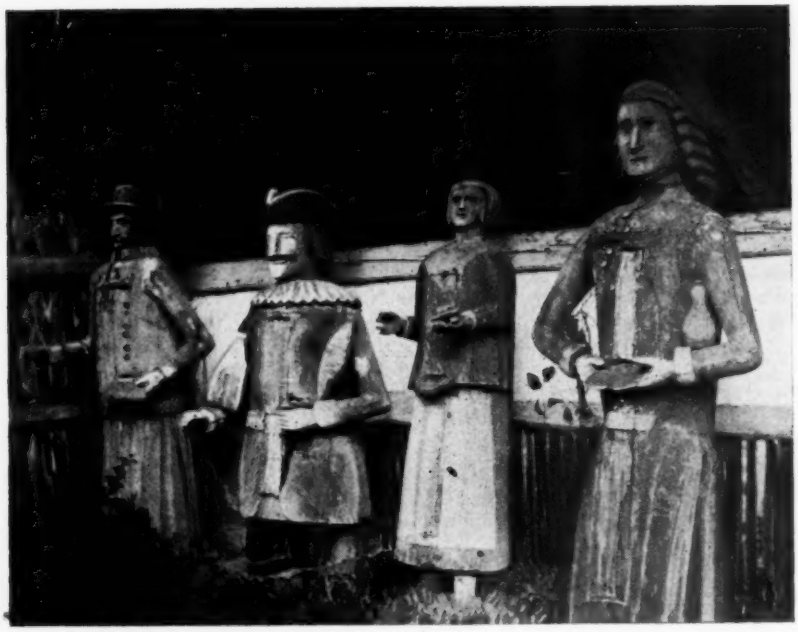
Tulip-Tree

All through the Southland and far up into the North, even into Michigan and northern Indiana, the tulip-trees are opening up their red-and-gold chalices to the sun. Imagine a somewhat rough-barked but tall and stately tree, big as a cottonwood, with a vast bed of tulips plucked up off the ground and scattered carelessly about over its crown. That is the tulip-tree, variously known otherwise as tulip poplar, yellow poplar, whitewood and fiddle-tree.

The latter name is in recognition of its very odd leaves, which with their squared or slightly bifurcated ends and constricted sides have some faint suggestion of a violin shape about them. The Greek name which Linnaeus gave it, however, is a bit of classic poetry to the sensitive ear **Liriodendron.** It means "lily tree."

The beautiful flower-cups whence the tree gets both the commonest of its common names and its classical title are of about the size and shape of tulips, and have colors that no tulip need be ashamed of. In their internal structure, however, they are quite different. Instead of the triple arrangements of stamens and pistil-parts, they have indefinite numbers arranged in spirals. This is a mark of relatively primitive rank in the evolutionary scale of plants; and indeed the tulip-tree is placed by botanists very near to the front of the book, along with the magnolias.

Strange Old Beehives



This picture was sent to us by Raymond J. Brown, editor of the Popular Science Monthly, published in New York, and shows the strangest beehives in the world. They are painted wooden figures to be seen in a small village in Silesia. The oldest is said to date back to the early years of the seventeenth century, when the property on which they stand belonged to a monastery. The latest were carved more than a hundred years ago.

The bees go in and out through a hole in the head, and there is also a board in the front which may be taken out to permit the removal of honey.

We are indebted to S. F. Haxton, Pennsylvania, for securing the picture from Popular Science Monthly, and the information is from the latter paper.

One Way to Check Swarming

By W. H. Eastman
Kansas

When there is a heavy honey flow and when bees are building up brood rapidly, it seems to me they are practically always crowding the brood chamber and, as Mr. Demuth states in the September number, nearly always they swarm. And I believe they do it on purpose; who knows but to fulfill the injunction to "multiply and replenish the earth?"

It seems there must be a lesson in this somewhere. I believe that spreading the brood helps to relieve the situation.

I started with a few eight-frame hives and have clung to them, partly from necessity and yet there are features about them I like. When the brood chamber in a hive as small as this gets crowded in an intense honey-flow, what is wrong with taking an empty hive body filled with foundation, removing half of the brood combs from the brood chamber and inserting an empty frame of foundation between each two combs in the brood chamber? Likewise insert a comb of brood between each two frames of foundation in the full depth super we are adding?

Then the brood chamber consists of two eight-frame hive bodies, 16 frames in all, arranged with a comb of brood and a frame of foundation alternating. I do not think a colony of bees will ever swarm out of a hive arranged like that. They will try to fill up and crowd the brood nest again, getting it into a condition to cast a swarm, of course.

The big hive contemplates no such work as this as I well know, but in my case I thought it worked very well provided the weather was warm enough and there was plenty of nectar in the fields. The queen, when she looks over the arrangement, may think the beekeeper is Anti-Volstead but, for an amateur, it has the effect of keeping the bees at home.

Shallow or even deep extracting combs can be put on top and the bees do good work if the flow is intense. Like Mr. Dadant, I don't like excluders but eight-frame beekeepers have to use them at times. I like the arrangement of alternating foundation with brood better than the Demaree plan.

Knowing Caucasian Pures from Impures

By Robert Hotek
Wisconsin

I have seen so much argument about being able to tell Caucasian pures from hybrids, that I present my opinon on that subject. I have had Caucasians for a few years and it is more difficult to **keep** them pure than it is to know **when** they are pure.

Here is how you can tell: Pure Caucasian workers call for gray bodies with silver bands. When they get mixed with either of the black races, they are all black but if they get mixed with Italians, they are either all black, or some yellow with the black, without any particular color dominant.

The queens hold their color better than the workers even when mixed with other races and so will the drones. I have had queens that were mixed with Italians, their workers were yellow but their drones and some daugthers as pure as from a high grade tested Italian queen.

At the same time I had a queen that produced pure drones but her workers and daughters were all yellow. A few yellow drones may deprive the entire apiary of pure Caucasian but once you get them pure, I think they are the best bees on earth.

As to honey production, they are equal to any other race and they are far easier to handle. I have a neighbor living right across the road from my place and when I worked with the Italians, he knew it because the bees flew up there and chased the neighbors around but with the Caucasians I do not have to worry and do not wear a veil or gloves.

I do not wish to criticize the Italians, however. They are good honey gatherers but a little too cross for me. I have had Carniolans too. They are good honey gatherers and fairly gentle but they swarm to excess and I do not like that. Some of your readers may disagree with me but I give these comments as my opinion and I will probably always stick to Caucasians.

Noisy Bees

Those hives are in best case where the bees make most noise; but those commonwealths are in best state where least noise and tumult is.

(From an early writer.)

W. H. Hull,
Virginia.

Variations in Bees

By L. E. Orr
California

AS H. S. Rogers (Illinois) puts it, we are happy to read in the October number, "Why should the writers differ so radically about queens?" A question which has been asked by thousands of beekeepers, no doubt.

This question occurred to me when I first heard old beekeepers talking about their beautiful queens for which they had sent and the wonderful bees they produced, even before they had an opportunity to learn how profitable they might be.

The same puzzling question came to me when I had but a few colonies and had read little in the bee papers. One day when an old-timer was visiting me, he told me **one of the safest and best ways to get good queens is from your best honey gatherers in your own apiary.** He put honey production strong to me that time, and the old man's advice seemed to fit in good.

I tried my luck on chickens in a small way. After trying several breeders and being in no way satisfied that the true run of breeds was what they were claimed to be, I quit the chicken business and drifted mostly to beekeeping.

The same claims and variations hold true for chickens, bees, hogs, cattle and about everything else produced for commercial purposes. A show bird will not produce the eggs, and so on.

We know bees have been much the same for ages and their habits regulated by nature, and no human mind has had control of them. No one strain or breed of bees is any better than another, provided the conditions under which they are maintained are the same—queens of the same degree of perfection, bees, hive, location, climate and management. You know there is no such thing as 100 per cent perfection in the breeding of bees or anything else. There can be no perfect reproduction. Nature has not yet permitted it.

Quoting Mr. Rogers again: "I have felt it necessary to try out some of those wonderful bees to see for myself." This is the exact feeling that comes to us all, but the majority of those who have started beekeeping have started with just bees, and, if records are correct, some of our largest and most successful men started like the average amateur, by catching a stray swarm or cutting a bee tree, or by a friend giving him a swarm, or by spending $5.00 worth of hard work for 50 cents' worth of bees.

The whole collection meant just "bees" to him, and before he has time to study or read about the strain of bees which might be best, ten chances to one he has about all the varieties there are. The more he reads about bees, the more he thinks he ought to try a real "Italian" bee.

This is just what happened to me and several others. I sent away for a queen and there is no record to show that my apiary was much improved, in spite of that wonderful and beautiful looking queen.

The breeders are doing the best they can. They have the best stock they can get. They do not misrepresent, so the fault does not lie there.

In the process of my beekeeping, I sometimes made it a practice to divide my best honey-yielding colonies, the largest colonies I had, in a good honeyflow. This gave me good increase and I could select queen-cells and trap young queens.

When I got a fighter I would pinch the queen's head off, hunt out a capped cell or take a queen from another colony. When one yard became too crowded I started another. Many times I caught swarms from a neighboring apiary. Many beekeepers around me sent away for new stock, and you know you can gamble on most any swarm that has traveled a long way from home to be composed of bees that will produce well and have a good queen.

As my bees have been crossed and recrossed, drones moved from one yard to another, divided colonies moved to other yards, this whole process has proven most successful. I have good, gentle colonies.

As to swarming, some years when conditions are normal not over five out of seventy colonies swarm. There is little trouble to keep swarming down when the amount of carried-over stores is reduced early.

Last spring, for the first time, my mixture of gray, black, yellow, golden and leather bees were removed to coast range hills in a sage and buckwheat country. Strong colonies that only required three stories in any year in their home location took four in the best, with some brood up to the fourth super.

The more honey they brought in, the worse they would fight. My most gentle bees became outlaws of the worst kind. Some of them had not gotten over it when I last worked with them in September extracting, after they had been back to their home location for over two months.

The disposition of a single colony can be changed in a short time when it is removed from its shady location and placed among a large number of colonies, in the open, far from shade. It is more convenient, however, to work with bees in the open, where the hive is warm and the covers and supers give easy as you use the hive tool.

Much of the irritation of bees, about which we read, is caused by the location instead of being due to the strain of bees. For several years I have observed this fact.

Late one season when helping to finish extracting for a young friend, he happened to have a hive that had a 2½-inch round opening at each end of the brood chamber. Screen was used over this by an old-timer who thought it was a good stunt for moving. A piece of tin was tacked on after hot weather was over.

My friend forgot to replace the tin and we were having no trouble with the rest of the bees until we started to rob this colony. The bees got too hot for the boy and I told him to get out until I was through taking off the honey. Just as soon as he could get to it, he replaced the tins over the holes and after that there was no more trouble.

I contend there is only one thing to bear in mind: When you read claims for different kinds of bees, remember that much of the difference is in the beekeeper, and not in the queens.

Do not blame a queen if her daughters are not all profitable or do not have a pleasant disposition. Apply the same rule in that case as we do with humans. Blame "Dad" for the bad qualities and Mother for the sweetness.

Bees Increase Seed Yield

Introducing hives of honeybees into or near the fields at the time when red clover is in full bloom will increase cross-pollination and consequently increase the yield of seed. A lack of cross-pollination at this time will result in a small yield of seed.

That there is room for expanding the crop in Colorado and other Western states is indicated by the fact that more than 7 million pounds of red clover seed have been imported annually into the United States in the past 10 years.

E. A. Hollowell, agronomist, in the bureau of plant industry, prepared the leaflet after studies and observations on red clover seed production in the Intermountain region. More detailed information may be obtained from T. G. Stewart, the agricultural college extension agronomist at Fort Collins.—From News Notes, Ft. Collins, Colorado.

Maison St. Joseph, Otterburne, Manitoba.

Points on Production, Handling and Selling of Honey

By Bro. T. Pineault
Manitoba

BEEKEEPERS with 100 colonies and more who are familiar with modern equipment and methods must be considered as "Carload honey producers." A minimum carload is about 24,000 pounds which gives the right to a special rate in rail transportation. This amount of honey in Manitoba may be obtained easily with 100 to 125 colonies in localities where there is an abundance of nectar.

Apiary of 150 colonies, average production in 1927 to 1932, 308 pounds of honey.

It is possible to increase the honey crop when sweet clover is sown for seed each year; not only the white sweet clover but the yellow sweet clover. I quote from a letter from Prof. Mitchener whose opinion also agrees with the Bee Division at Ottawa, with Mr. Dadant, Editor of the American Bee Journal and Mr. Demuth, Editor of Gleanings in Bee Culture:

"I believe that yellow sweet clover is an important plant, blooming about a week earlier than the white and so, when it is grown, the nectar flow is extended that much. Where the honeyflow comes early in the season, it is particularly valuable. In any event, the extension of the nectar flow by a week is of considerable importance. The quality of honey from the yellow clover is about equal to that of the white sweet clover."

Let me tell you what we did at Maison St. Joseph to increase the crop. Sweet clover is cut as soon as it blossoms or just before. So we have blooming clover a few days after the first crop is cut down. We also use a sweet clover field as pasture which delays the blooming and gives us nectar for a longer time provided our neighbors do not also manage the same way.

A plague of grasshoppers last year did not help in raising honey. According to Prof. Mitchener, although much poison was spread over areas of southern Manitoba to kill grasshoppers, there was no proof that bees visited this bait and were killed.

Beekeeping to be profitable, must be conducted with all the skill possible. There are many beekeepers with

On the left are the two honey houses. The hives are supported by iron supports resting on bricks.

a few colonies who give their bees little or no attention and get practically no honey.

Honey House and Equipment

The arrangement and location of the honey house is important and will depend on conditions and circumstances. The usual mistake is in making the honey house too small. It should be so located also that it will receive light from the south.

Rapid manipulation is greatly facilitated by simple and uniform equipment. Seven or eight years ago, we had in our apiary 8, 10 and 12 frame hives, even the large 11 frame hive. Now our equipment is of the same style and size with all parts exactly alike. We use the standard 10 frame hive.

Location

As a rule, it is not considered good to keep more than 100 colonies in one apiary in Manitoba and bee yards should be at least two miles apart. At St. Pierre, in the limit of 4 or 5 miles, there will be this year, 1933, about 1500 colonies. (See map.)

The only way to learn how many colonies any locality will sustain is to study the honey plants and the production records, until the beekeeper is able to decide for himself the best number to be kept and where they shall be placed.

Care of Bees

The beekeeper must see that each colony is in normal condition, headed by a good queen in time to produce bees for winter and he must provide food, protection and room for colony existence and prosperity at all times. All colonies should be so abundantly supplied with stores for winter, that there will be plenty left for spring brood rearing.

We are very careful about the food and preparation of our colonies for winter. Last year we lost only one colony out of 146 and they died of starvation, having probably been robbed the previous fall.

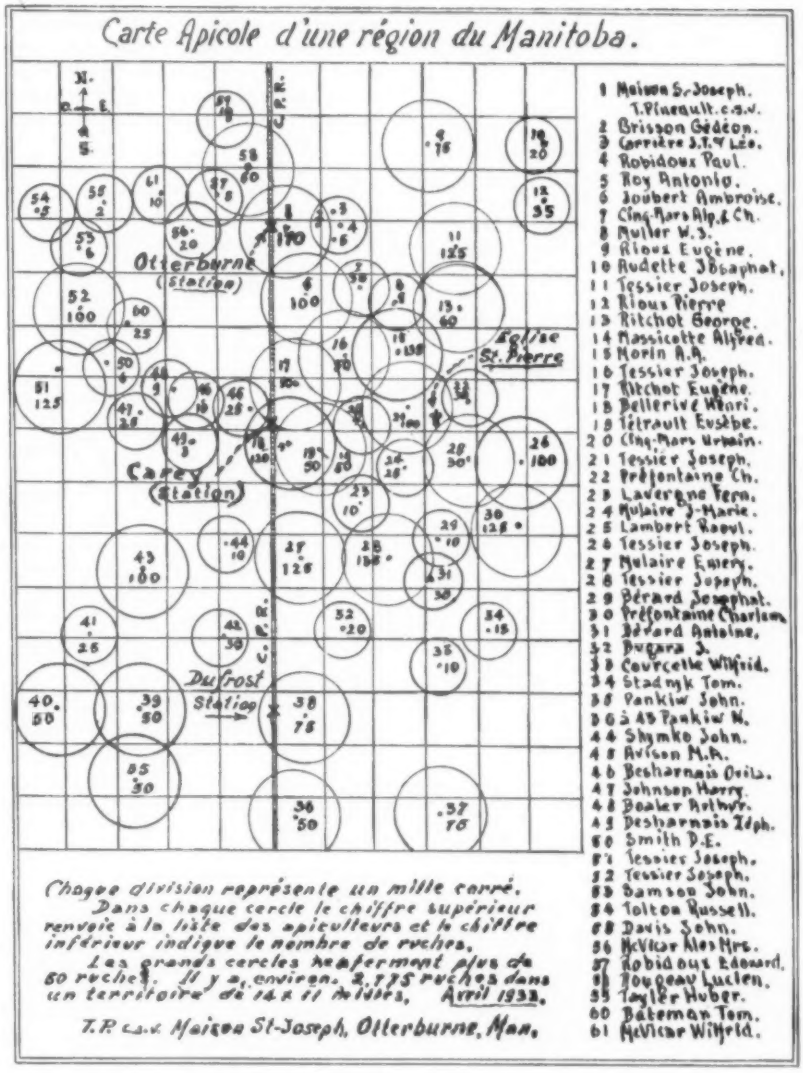
No one strain of Italian queens can be recommended as the best for the honey producer in the north, the proper plan is to buy untested queens from several breeders and choose among them those suitable for breeding purposes. Then the beekeeper should plan to raise his own queens from this stock.

If you have a good colony of bees at the beginning of the active season which comes with the end of June south of Winnipeg, it is necessary that the beekeeper begins his preparation in August the year before.

Handling the Crop

The 5-pound pail seems to be more in demand when honey is sold to grocers and retailers than any other package and it may be more profitable for the small producer. The 10-pound can in our northern country,

Interior of honey house, Maison St. Joseph.


Carte Apicole d'une région du Manitoba.
Otterburne (Station)
Carey (Station)
Dufrost Station
Eglise St. Pierre
1 Maison St-Joseph. T. Pineault, c.s.v.
2 Brisson Gédéon.
3 Cornière S.T.V. Léo.
4 Robidoux Paul.
5 Roy Antonio.
6 Joubert Ambroise.
7 Cinq-Mars Alp. & Ch.
8 Muller W.J.
9 Rioux Eugène.
10 Rudette Jos. Raphaël.
11 Tessier Joseph.
12 Rioux Pierre
13 Ritchot George.
14 Massicotte Alfred.
15 Morin A.A.
16 Tessier Joseph.
17 Ritchot Eugène.
18 Bellerive Henri.
19 Tétrault Eusèbe.
20 Cinq-Mars Urbain.
21 Tessier Joseph.
22 Préfontaine Ch.
23 Laverdure Ferm.
24 Hulaire J.-Marie.
25 Lambert Raoul.
26 Tessier Joseph.
27 Hulaire Emery.
28 Tessier Joseph.
29 Bérard Joseph.
30 Préfontaine Charlem.
31 Bérard Antoine.
32 Bugara J.
33 Courcelle Wilfrid.
34 Stadnyk Tom.
35 Pankiw John.
36 & 45 Pankiw W.
44 Shymko John.
45 Avison M.H.
46 Desharnais Odila.
47 Johnson Harry.
48 Beaker Arthur.
49 Desharnais Zéph.
50 Smith D.E.
51 Tessier Joseph.
52 Tessier Joseph.
53 Damson John.
54 Tolton Russell.
58 Davis John.
56 McVicar Alex Mrs.
57 Robidoux Edouard.
58 Tougeau Lucien.
59 Taylor Huber.
60 Bateman Tom.
61 McVicar Wilfrid.
Chaque division représente un mille carré. Dans chaque cercle le chiffre supérieur renvoie à la liste des apiculteurs et le chiffre inférieur indique le nombre de ruches. Les grands cercles renferment plus de 50 ruches. Il y a environ 2,775 ruches dans un territoire de 14 x 11 milles. Avril 1933.
T.P. c.s.v. Maison St-Joseph, Otterburne, Man.

Explanation of Map.

This map shows the largest grouping of bee yards in America. In this district at Otterburne, I have counted in a rectangle of four or five miles, 1200 colonies and in a twelve mile square, about 2500 colonies. Each small square represents a mile and each circle an apiary. The number above the line in the circle represents the name of the owner and the number below the line is the number of colonies in the apiary. The size of circles are in agreement with the number of colonies. The average number of colonies for the 45 apiaries is 55.

The apiary with 160 colonies is the apiary of Maison St. Joseph which was established about 1914 and is the one after which the others of the district are modeled and it is the one which has always given the largest crops and is considered as a model by the visitors who come to our place.

is better for carload lots when sold to brokers. The 60-pound can and barrels are the containers for export honey.

By early negotiations with manufacturers and brokers of containers, it is usually profitable to obtain a satisfactory price. Cooperation in the purchase of package bees, honey cans and supplies, gives many advantages to associations. In our local association, at St. Pierre, three carloads of honey cans were bought at good terms.

At Maison Saint Joseph an eight-frame automatic reversible extractor has been used fifteen years, and to dry our cappings, we have a two-frame Jumbo extractor belted on a counter shaft governed by the pulley of the larger machine. When honey is cold, a 1½ horsepower engine is taxed to the limit so we use a 2 horsepower engine and have no trouble. We use a rotary honey pump.

Wide spacing of combs are a great advantage because they are very easy to uncap. Some operators begin uncapping at the top and some at the bottom, either way is all right but to keep the steam knife warmer and not to break cells, I start in the middle of the comb going down and then draw the knife up.

If a capping melter is used of the long type, there is plenty of room at one end for the dripping combs to rest. It pays to provide space in this way for a number of combs so that the uncapper may get enough ahead to enable him to attend to other work occasionally, such as rearranging the supers and so on.

Instead of melting the cappings, however, we use a strainer over the uncapping box and these cappings the next morning are dried in the two-frame Jumbo extractor at the same time we run the larger one.

Our extracted honey is stored in three large tanks with a capacity of 2400 pounds each. After it has settled and when it is time to put the honey into small containers, we skim the best we can and put this skimmed honey into the next large storing tank. Then, when it is time to empty the second tank, we skim anew and pass this honey through a good white sugar bag and keep it in thirty and sixty-pound cans.

Selling the Honey

Honey must be packed clean, thoroughly ripened and in our northern country, it should be stirred well before it is packed so granulation will be fine and more desirable for the trade.

New beekeepers should remember that beekeepers' associations are formed for the betterment of beekeeping and to help them in their problems. To favor the beekeepers of our locality in our own case, we ask them to participate in the selling of carload honey, giving the associates the same advantages we receive ourselves in the saving of commission and freight charges.

Advertising honey by radio talks helps much in the consumption of this delicious food product. First class and neat containers are important. Advertise your honey, eat it yourself, circulate printed matter about it.

Wherever possible, the beekeeper should sell his honey near the point of production and try to develop his market at home.

Sometimes a mail order business is profitable. We have tried it at Maison Saint Joseph several years and sold a good part of our honey crop this way. This year, as a result, we sent one carload to Montreal and a second carload to Saskatoon.

Package Bees and Queen Supersedure

By R. B. Manley
England

HAVING had experience with package bees from France for seven or eight years, my conclusions in regard to package bees and queen supersedure may be of interest. The black bees coming with these packages have always been decidedly nervous and bad-tempered and the supersedure of queens was at first a serious difficulty.

After some trial, it appeared that when a package contained no brood after being hived several days, it was not as a rule actually without a queen as was at first thought to be the case, but had a queen present which the bees, although they did not actually kill her, neither did they properly accept her and feed her as their permanent queen. Such a queen was partially tolerated, being balled on opening the hive and being generally worried at all times. After a time an egg or two would be laid, whereupon queen-cells would be started and the queen killed outright.

After a year or two it was found that where packages were hived on drawn out comb, the losses of queens were heavier than where foundation only was used. Also that if a package on foundation was left alone for ten days with the exception of feeding, which must be done without opening the hive or exposure of the combs, losses of queens were comparatively rare.

Of course, guessing is anathema to the scientific mind but the practical beekeeper has to guess and the theory of the writer is as follows:

When a package with a fertile queen is hived on drawn combs, the queen is confronted with unlimited space for egg-laying. Now a traveled queen has not had any chance to lay for some time and it is well known that when this is so the ovaries cease to develop eggs. The queen shrinks in size and becomes more like a virgin than a queen in heavy production. Whether anyone has been able to show definitely how long is required to bring a queen in this condition back into full production I do not know but it seems probable that a period of 24 hours at least and probably more is needed.

It seems likely then, that the instinct of the workers, faced with the phenomenon of a queen that does not lay at a time of the year when she should be laying rapidly, with honey present in the hive or syrup being fed and when there is plenty of ready drawn comb available, will lead them to conclude that such a queen is worthless. They cannot understand that after a laying holiday, time is required to bring the ovaries into bearing again and so as soon as an egg is laid, they set about raising a new queen from it.

The writer found also that to hive packages on young brood led to supersedure two out of three times which seems to indicate that this theory is correct.

Now if, instead of using drawn combs, the packages are hived on foundation and fed heavily with syrup, what happens is this: The bees must first cluster on the foundation and generate heat to enable them to build combs. They must establish a connection with the feeder and as the foundation is drawn, they will store a little syrup in some of the newly formed cells.

The queen will have at least 24 hours before being required to lay at all and then will begin by laying a small number of eggs per hour, gradually increasing her laying as her ovaries come into normal production about as the new cells are built to receive them, so the queen is gradually brought up to full powers in a natural manner without abnormal strain; as the writer believes, without violating the instinctive reactions of the workers and antagonizing them to the queen.

When a natural swarm is about to issue, the queen slackens in egg production and shrinks in size, until she is somewhat similar to a traveled queen, though in a lesser degree. When such a swarm is hived by a beekeeper on clean drawn combs all ready for the reception of eggs, a queen rarely, if ever, lays at full speed right off but often takes two or three days to come into full production.

There is no such thing in nature,

however, as a swarm going on to clean combs like that. Even when a swarm finds combs in a tree or elsewhere, they are always dirty and stale, often mouldy, and require much preparation before the queen can lay and this time corresponds to that needed to build combs in a state of nature or to draw out foundation in domesticity.

In the case of a swarm the queen is the actual mother of the swarm and will not be interfered with by the workers, whether she lays properly or not; but the case with package bees is quite different as then the queen is an alien lately introduced and has never actually headed the colony from which the package was taken.

What Is the Relation of Brood Nest to Super Room?

By Carl Kalthoff
Missouri

CONSIDERING which colony is the most productive according to the size of the hive used (see the article by Wendell T. Card, December, "How Big Must the Brood Nest Be?") I will give you an interesting episode that happened to me several years ago. It came to my mind when I read Mr. Card's article.

At several times in the past, I have been tempted to write about this but was afraid I would be branded as a story teller. At the time, 1925, I was seventeen years old. I started beekeeping in 1921. My first bees were hived in an eight-frame hive but I used only seven frames and no foundation and let the bees build combs according to their wishes.

The result was that it was impossible to remove the combs for examination. But as I did not intend to harvest any honey the first few years, I decided to let them go the way they were and hive the first swarm that issued on the original stand and move the parent colony to a new place.

I bought ten-frame equipment after that first year so that all my bees were in ten-frame hives with a number of supers for each. The original eight-frame hive had only one super. I did not want to invest in eight-frame equipment. This super was always put on the hive a few weeks before the honeyflow but I did not expect any surplus as I used this colony for increase. The other colonies were managed to prevent swarming. This program was continued every year until 1925 when it resulted differently than before.

To make what I have to tell easily understood, I will give the condition of the weather some months before the swarming season of 1925.

During the winter of 1924-25 we had considerable moisture but the spring was rather dry. There was a profusion of dandelions during April and May and quite a bit of fruit bloom. I actually harvested twenty sections of comb honey the first of May from one of my colonies in a 10-frame hive.

On the first of May I put a super on the eight-frame colony, my increase colony. That's all it had done to it. The other hives were supered as needed and managed to prevent swarming. 1925 I shall always remember as one of the best honey years. I have never experienced such a flow since or before and I have been in beekeeping thirteen years.

By the first of June, the white clover flow was in full swing. It was hot and dry during the flow which lasted about three weeks. Then the clover was brown and the ground was cracking for lack of moisture. I was expecting the increase colony to swarm by the first of June as it had done the past several years. It did not and I became inquisitive.

On taking off the cover, I was surprised to find the whole super of 24 sections filled from side to side and most of it capped as beautifully as comb honey can be capped. I removed it and refilled the super with empty sections. I figured if I could get some more of this nice comb honey I would try to prevent them from swarming somehow.

After putting the super back, I decided to examine them again a few days later but after three days, my brother came running to me and said that the eight-frame hive was swarming. Sure enough and the swarm was a whopper, filling a half bushel basket. On removing the cover of the hive, I was surprised again to find that practically every section was built out and filled with nectar although little capping had been done. While my brother watched the swarm, I hunted out a few boards from my father's workshop and an hour later emerged with a home made super filled with sections which I put between the super that was already filled and the hive body. I then returned the swarm to the hive. They marched in and hummed as if it was their new home and I set my brother to watch over it for fear it would swarm again later the same day.

But it did not until four days later. I took off the supers then and in the four days interval since I had given the second super, they had built out every section in it and had sealed most of the sections of the first super. Every sealed section was removed and replaced with empty sections. Then I returned the swarm to the hive. That was the last time they swarmed that season.

The honeyflow had been in progress two weeks and was rapidly closing. In another week, it was all over.

Three days after the final examination, I removed another lot of sealed sections from the colony and refilled again with empties. I harvested 104 sections of nice comb honey, most of it grading extra fancy, from this eight-frame hive. Some sections did not even have a pop hole in them but were filled and sealed over completely to the edge of the wood, the finest combs I have ever produced.

I do not doubt that this colony swarmed because of a lack of room to store honey. Every time I gave them more storage space, they would go to work with fresh haste and forget about swarming. They must have had their brood chamber full of brood. Every time I looked through the supers, they were jammed with bees, so that I wondered how they could move about. The spring had been favorable for breeding and there was much early bloom as mentioned before.

Or is it possible that bees are able to comprehend what is going to happen in the future? After the white clover flow was over, we had such intense hot, dry weather that there was nothing for the bees to gather. The fall flow was a failure so that by November I had to feed all my colonies sugar syrup to tide them over the winter. The next year, 1926, was practically a failure.

Some of you might say that a swarm probably issued from this particular hive and I did not know it. But that is not so. The bees were kept about fifty feet from the house where my mother could notice anything going on among them and my younger brothers and sisters were more or less in the yard playing and one of them had made it a habit to watch the bees during the swarming season.

Now, just how large must the brood nest be and what is the relation of the brood nest to the super room?

How Can Honey and Nuts Be Combined?

Is it possible to make a mixture or combination of Honey and Nuts? Any information or knowledge of other people's experience along this line will be welcome.

I have heard that some have tried it and have lost money by it, the product not remaining in good condition.

J. B. Ballantyne,
New Zealand.

[What do our readers say in regard to this question?—Editor.]

Our "spring" in Finland.

Honey Plants of the Remote North

By Alexander Bogdanoff
Finland

AFTER a hasty look at the map of Europe and the location of Finland, many people will conclude that Finland is so far to the north that nothing can be found but snow, frost, and everlasting winter. However, in that remote cold northern country, there are conditions favorable to beekeeping.

The awakening of life in the spring is very indefinite here. The first flight of bees occurs usually between the 1st to the 5th of April with snow still covering the ground two or three feet. The first pollen plant, alder, begins to bloom a little later and, in spite of the snow, bees collect pollen from it during warm sunny days.

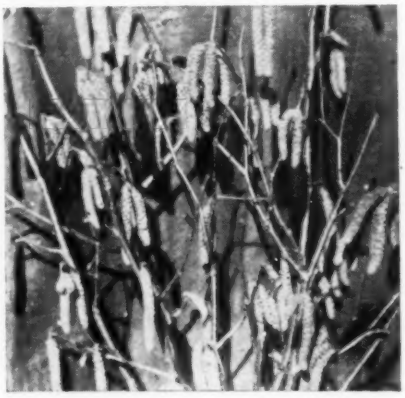
The next pollen plant is the nut-tree which blooms while the snow is not yet gone and frosts often occur during the nights. The bees can profit from those plants only during warm days, but as soon as the north or east wind begins to blow, the weather changes instantly for the worse. The temperature falls, it grows cold, sometimes it snows or rains and the rain freezes as soon as it falls.

When it is gloomy weather, such a frost is not so bad since the bees are inside the hive and do not venture out but if the sun is shining and the sky blue, the bees are tempted out and fly to collect pollen or water and, becoming paralyzed by the cold air, they perish. That accounts for considerable losses in the spring.

About a month later, after the first flight, our first honey plant, the willow tree, begins to bloom. There are several kinds and they would give a considerable crop if they were numerous enough but the actual honeyflow from them is not important. Yet it puts new life in the bees, inducing them to brood rearing, but since the booty is so small, it in no way suffices for their needs.

Shortly after the willow, before clover, fruit trees bloom and berry bushes, as well as some meadow and wood plants, but their number being likewise scarce, they give only a small return and their principal merit consists in stimulation and prevention of robbing.

To supply the colony meanwhile with food, it is necessary to have a good supply of the previous season's honey in the brood chamber or to give them food, otherwise one cannot expect, at the time of the principal crop, to have strong capable colonies.



Hazelnut (**Corylus**), blooming with snow and frost still abundant.

In June, several kinds of clover bloom—white, alsike and red. From the latter, in a propitious year, in dry localities, even our northern bees succeed in collecting a certain amount of honey, perhaps not very large. White and alsike clover give larger crops and are considered our principal honey plants. In several regions, willow herb blooms at the same time giving a good crop of water white honey. Basswood is found also but not in the wild state, only in gardens and parks and real basswood honey is almost impossible to get.

In most cases, during the first months of honey crop, June and July, the bees generally collect mixed honey from different kinds of meadow and field plants of light quality and that crop is of rather long duration, from 4 to 6 weeks. Rain or drought may give intervals to the flow but that is not a frequent occurrence. The increase in the scale hive will vary between zero and 5 killograms per day.

At the end of July, the flow lessens and the bees collect only a little honey from the last plants or sometimes honeydew when they find it in the pine woods which grow everywhere in profusion. East of Finland where the heather grows, the beekeepers have to remove their light honey before the beginning of the heather crop. This heather, or ling as it is called in England, is very little known in America and Mr. Pellett's book "American Honey Plants" barely mentions American heather.

Here in Finland, large meadows are covered with it. It grows on sand as well as on swamps and gives a very good crop. It starts blooming about the first of August and blooms until the 1st to 10th of September. The main honeyflow being from about 18 to 20 days but because of the great abundance of bloom, the bees gather much more honey from it than from any other source, averaging between 2 and 4 killograms a day.

Heather honey is dark in color and varies in its color and in its density from year to year. It is sometimes a pinkish red. It granulates rather quickly but never reaches the hard granulation of clover honey and remains in excellent condition. However, in color, quality and density, it differs considerably according to the locality.

Usually it is so thick that it cannot be extracted by a honey extractor.

Even with the best of methods, about 25 to 50 per cent of the honey will be left in the combs when the extractor is used.

The heather crop ends about the 20th of August and usually that is the end of our season. The first killing frost comes in September and sometimes the first snow. The last flight of bees generally takes place from the 25th of September to the 25th of October. Then comes winter.

The winters are not all alike. In 1928-29, it went to 39 below and continued for weeks at a time with deep snow. In 1929-30, there was very little snow, only a few inches, and the temperature was about 20 to 35 degrees above. Since it is impossible to know what the weather will be beforehand, the only safe way in preparing bees for winter is to be ready for anything.

Efficient Burning of Diseased Material

By T. C. Johnson
Indiana

I read so many good things in your Journal and a lot about burning diseased bees and fixtures and about digging deep holes so as to be sure to get it out of reach of the bees.

Well, as I am employed as deputy bee inspector I have had a lot of burning to do and I wish to assure you right here it is not an easy matter to always find a place that you can dig a deep hole to burn bees in, close enough to where the diseased bees are. Sometimes we have all the way from 1 to 15 or 20 colonies to burn and it makes no difference how deep the hole or how good the fire is in that hole. When you throw on 20 or 30 solid slabs or combs of honey, it is apt to smother the fire or burn very slowly, as you all know if you have tried it. It is not safe to bury honey without burning, no matter how deep the hole as skunks or some other animals might dig to it and leave a hole for the bees to get at it.

So I am giving you my way of burning it. Mr. R. M. Baker of Kendallville, Indiana showed me this method first. He is also one of our deputy inspectors. We work together a great deal on the clean up in the fall, as two can work so much better. And he is pretty good sized and the two of us can handle almost any sized hive from a nail keg to a salt barrel, and also handle most of the owners from a Tom Thumb to a six footer and several times they have told us we would have to put them in first but Mr. Baker weighs about 210 and I am pretty good on the shovel, so after they take a good look at the hole and one at Mr. Baker, they generally change their mind.

Now if there are not too many stones and tin cans, we dig a hole about two feet deep or deeper, depending on the digging, and big enough around to take care of the amount we have to burn. Then across the top of the hole we place old rails, iron pipes, old limbs, boards or whatever is at hand and enough to make a solid place to pile the combs. Then start a good fire in the bottom of the hole and start putting on combs, frames or boxes or what it may happen to be. That makes a good draft under the whole mess and it melts and runs right through the roaring fire as the wax stays on top and burns like that much coal oil. That keeps all honey burned brown as fast as it runs down and burns fast and no large chunks go down on the fire to smother it. And when all is burned we just shovel in dirt from all sides. That leaves a nice clean job if no drip is left on the ground where working with the hive, which we are always very careful about. I find this is the best and safest and also the quickest way to burn.

Rearing First-Class Queens

By C. P. Dadant

WE are all agreed that the business of queen-rearing is a special business which must be conducted by men who do not expect to produce a great deal of honey. The large honey producer, with hundreds of colonies, cannot expect to make the rearing of queens a special business. However, as our colonies increase and as our queens get old and must be superseded, we need young queens every year in large numbers and we must try to produce only the best.

For this purpose it is necessary to rear good drones and to avoid the production of poor ones. If we select the colonies from which we desire to rear drones, we must avoid rearing drones in the others. For this purpose we must remove the drone-combs from the latter colonies. But removing the drone-combs is not the only requirement; we must also prevent the bees from building more drone-combs in the same spots. To this end we must supply the bees with worker-comb foundation, if we do not have worker-combs already built. It is a remarkable fact that the bees will almost invariably build drone-combs in such parts of the hives as had drone-combs before, and for the same reason. If the hive has plenty of worker-combs, the bees are likely to judge that some drone-comb is needed. So they build drone-combs again and our purpose is foiled.

But what colonies should we select to produce drones? Of course we want them from our best breeders. But we must remember that the drones are not the full sons of the queen who laid the eggs. A queen produces drones without mating; therefore her sons are not the sons of the same father as the workers that are their sisters. As Dr. Miller used to put it: "A worker bee depends for her character not only upon her mother, but also upon the drone with which her mother mated. In other words, that worker is the daughter of her mother and also of her father, her father being the drone with which her mother mated. While this is true, it is not true that the drone is the son of his mother and of the drone with which his mother mated. He is the son of his mother alone; or, if you insist that he must have a father, then he is the son of his grandfather or of the drone with which his grandmother mated. He is of the same blood as his mother was, without any reference to her mating, since drones are produced from an unimpregnated egg; thus he is the product of the combined blood of his grandmother and of the drone with which she mated."

We should therefore, as much as possible, know the ancestry of his mother, for from that ancestry comes his worth. If his grandmother is a 100-pound queen, then he is a 100-pound drone.

We thus see that our apiary must be well considered when it comes to rearing the best queens and getting them mated to the best drones. Of course there are some drones in the vicinity over which we have no control. But we may control those to a certain extent by furnishing queen-cells to our neighbors at the time when their bees swarm. We may also get them to replace their common stock with some of ours by helping them remove their old queens and furnishing them good queen-cells to replace them. We help ourselves by helping others.

Replacing unwanted drone-combs with worker-combs is all profit. Some people think that drones are useful to help keep the hive warm, but anyone who has seen bees kill off the drones during cold, backward weather in spring, knows that drones are not reared by the bees to keep the hive warm.

Breakfast Cocktail.

1 egg yolk.
Juice of 2 oranges.
1 teaspoonful honey to taste.
Pinch of salt.

Beat together. Drink before starting breakfast.

Suggestions on Getting Queen Cells Without Grafting

By J. C. Elliott
Kansas

We all know that a drawn comb put in the center of the brood nest of a prosperous colony will be soon filled with eggs by the queen.

Now suppose we had this comb so we could divide it into strips, easily, and put the strips into cell building hives just like cell bars are used.

My idea is to put two half combs in a frame using thin boards for the midrib. The thin boards will be strips 1⅛ inches in width and will be slid into a groove in the end bars from the bottom. The bottom bar will be removed. It will take seven strips for each side of a deep frame. As large a piece of comb as is wanted for the frame should be shaved down to midrib and fastened to the board. I am going to try hot wax.

After the eggs are laid and before the strips are removed from the frame the cells should be cancelled in strips vertically. Then when the strips are removed and a single strip of cells are cancelled down the middle of each strip the cells to be drawn out will be left separate, so that they may be easily taken off. The old midrib will be strong enough to hang them by between the frames of the mating colony.

If you take the trouble to figure up you will see that one deep frame will give about 700 cells to be drawn out. Perhaps it would be better to use a shallow frame then there would be only half as many. Or a frame could be only partly filled.

I have never seen a scheme just like this put forward. I intend to try it this spring. I believe it will be easier, better and surer than grafting. It will mean getting the eggs on the road to queendom a day or more earlier than when they are grafted.

Washington Gives Publicity to Honey

Publicity to Washington Honey will be distributed throughout the State by means of a booklet on Washington Products which is being prepared by Mrs. C. G. Miller, President of the State Federated Women's Clubs. The booklet will be distributed through the various women's organizations over the State. The articles on the various Washington products have been written by specialists in the several fields, and at the present time are being edited and arranged by Mrs. Miller. The story on honey will be 500 words in length, and will tell briefly of the flower sources, producing regions, qualities, and uses of Washington honey.

N. N. Dodge.

From the Little Blue Kitchen

JUNE TIME.

Oh it's June-time today in my garden,
And the flowers, and the birds and the bees
Are filled with the sweet joy of living
On beautiful dream-days like these.

Oh it's June-time today in my spirit
And blue-birds of happiness dart
Among the fair blooms of love's planting,
And sing glorious songs in my heart.

Oh it's June in the world, and God's nearer
To you and to you and to you,
For it's June-time, and rune time and croon time
And the sky is all golden and blue.

Oh its June-time, it's June-time, it's June-time,
And all of the world is in tune
For it's rose time and love time and God's time . .
This magical season of June!

Lida Keck-Wiggins.

— : —

THE beautiful days of June are here, and no sooner does one say "June," than he thinks of roses, lovely, fragrant, exquisitely colored, and then comes the inevitable aftermath . . June brides.

A country bride has a lot of advantages over her city cousin who is obliged to buy all the decorations and the eats for her wedding.

Honey Lady remembers with a thrill of happiness a June wedding she attended a few years ago when the wedding was held on a moonlight evening of June, and the ceremony took place on a veranda, which was embowered in exquisitely lovely pink ramblers, intermingled with honey suckles!

The bride in a filmy white dress, with the regulation veil, carried a big bouquet of white roses from her own garden, and the effect was every bit as good as it would have been indoors with candles, cut flowers and a hot-house bouquet.

For the bridal supper the girl who lives in a small town or on a farm can find almost everything she needs for a truly regal spread right under her hands.

Honey Lady has taken special pains to look up and try out several honey recipes which may suggest to a June bride or two something that will "come in handy."

For instance here is a recipe for making a cake in which can be utilized both strained and granulated honey, and which will provide a very nice part of a dessert course for a wedding supper, or any other "company" meal.

This recipe was sent Honey Lady by a Blue Kitchen reader who asks that it be credited simply to "Lillian." This cake was greatly appreciated by a crowd of Honey Lady's young friends one evening not long ago. It is called.

Honey Layer-Cake.

To make it one takes:

2/3 cup butter.
1 cup extracted honey.
3 eggs (beaten).
½ cup milk.

Cream the honey and butter together, then add the eggs and milk.

Blend smoothly, then add

2 cups flour, containing
1½ teaspoonfuls baking-powder, carefully stirred in.

Add the liquid mixture and stir to the consistency of a stiff batter.

Bake in layer tins. When the cakes are cold, take finely flavored candied honey, and after creaming it, spread between layers.

"Lillian" did not give Honey Lady any special directions for making a frosting for this cake, but as it was desired to serve it at a party, Honey Lady "rooted around" until she found a fine little recipe in a U. S. Bulletin, and it worked so well, she is passing it along. This used on the Honey-Layer-Cake, makes it a thing of beauty and a joy to the last crumb. Here's how the frosting is made:

1½ cups sugar.
3 egg whites.
¾ cup water.

Boil the sugar and water until the syrup forms a thread when dropped from the spoon. While still hot, pour the syrup over the well-beaten whites of the eggs, beating the mixture until it is the right consistency to spread.

— : —

Of course ice cream OUGHT to be served with this cake, especially at a June wedding, and in these times when one wants to conserve every penny, home-made ices are quite the

thing, and this one particularly toothsome.

Honey Ice Cream.

1 pint milk. 1 cup honey.
6 egg yolks. 1 pint cream.

Heat the milk in a double boiler. Beat together the honey and eggs. Then add the hot milk. Place mixture again in double boiler, and cook till thick. Add cream, stirring well; when cool, freeze. Naturally the amounts used can be doubled or trebled according to the number to be served.

If one has plenty of luscious strawberries, a few particularly beautiful ones may be arranged on top of each serving of ice cream, with a dash of powdered sugar on top, and the individual portions will make a dainty little picture as well as a delectable morsel.

— : —

Last summer, Honey Lady suggested to Blue Kitchen readers that strawberries hulled and placed in a deep dish, covered with honey, then crushed and chilled, make a fine summer dessert. In case one HAS berries and it isn't convenient to make ice-cream this honey-berry crush would make a mighty good complement for honey cake at a wedding or otherwise.

— : —

Mothers will do well to remember that cane sugar candy is a deadly enemy to good teeth. Wise is she who trains little ones to, when wanting a sweet, ask for honey. Moreover, while authorities differ on this subject, it's sufficiently likely that cane sugar sweets bring about diabetes, and it's sufficiently authenticated that honey does NOT, to warrant Honey Lady in suggesting that honey for children is a mighty fine preventative of this dread "sugar disease." ALSO and thirdly, as the preachers say, honey being a predigested food, is a great comfort to weak little tummies.

— : —

Bees "don't know any better" than to spend their lives looking for sweets. How fine it would be if human beings would get the same habit! Life is just full of such flowers as folks given to sweetness, kindness, gentleness. Yet some folks are always looking for the bitter-herb variety of humans, and naturally find them. Once more Honey Lady suggests that Blue Kitchen readers take a hint from the busy little bee.

THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

REQUEENING CROSS BEES

Am an enthusiastic beekeeper on a small scale. I have a problem which is very vexing to me. Though I have an idea which will solve my trouble—if it will work—I want your approval and suggestions.

The bees I have are the noted wild, vicious native bee which will sting on the least provocation. I desire to requeen, using both Italian and Caucasian strains. But, it is next to impossible for me inexpreienced as I am to find a native queen in a hive overflowing with these vicious devils.

Will this work: Place a new brood chamber containing empty combs, the new caged queen, and one frame of brood with all bees shaken from it, on the old location; on top of this place a queen excluder; then a super of empty combs on top of this for honey storage; on top of this super place a bee escape board with a Porters Bee Escape. Then on top of this place the old brood hive, which contains the old queen, with the rest of the brood.

Will these bees trapped out of the old brood hive above release and accept the new queen?

I would appreciate your comments and suggestions very much, though please bear in mind that I am not an experienced beekeeper, so you must "talk my language."

ARKANSAS.

Answer.—Your proposed way will work, But I would advise you to put more than one comb of brood in the main hive. The less combs of brood you will leave with the old queen, the better you will succeed.

I would also suggest that you do not leave the colony too long in that shape as the old queen and the bood will suffer from the loss of worker bees. A couple days of sunshine ought to be sufficient to fix things to that you can find the old queen and kill her and unite all the colony.

THREE-BANDED OR YELLOW BEES

I am writing for a little information. Which is the best Italian bee, the three-banded leather-colored Italian bee and queen, or the extra yellow Italian queen and bee. Which is the best honey gather and which is the gentilest to handle? Also what about the Caucasian bees, are they tamer bees than the Italian? Better workers or not? Have they got longer tongue so they can work on red clover and alfalfa? How do they compare. Also these Carniolans, what do you think of them, are they good honey gatherers? How about their tongue? Can they work on red clover or alfalfa? Are they tamer than Italians? Where are the Caucasians and Carniolans imported from, are they larger or smaller than the Italian? What color are they? Are they smooth bees? Now if you can help me out on this, I surely appreciate it, and any other advice on them at once as I want to get some bees and queens. Answer at once. Thanks.

OHIO.

Anwer.—The pure Italian bees, whether leather-colored or golden yellow, are both gentle. The only cause for the golden to be of cross disposition is when they are mixed with the Cyprian bees which are very yellow, but also very cross. We prefer the leather-colored Italians for ourselves.

The Caucasian bee is a grey bee and is usually very gentle, so is the Carniolan which comes from the mountains northeast of Italy.

None of those bees have a perceptibly longer tongue than the others. They can all work, at times, on red clover, but most of the time none of them can secure any honey from it. It is only when the corolla is shorter or when the blossom is extra full

Choice Bright Italian Queens Queens that are a pleasure to work with and be proud to own. Requeen with stock that has been bred and selected in the North the past 30 years for good winterers, hustlers, gentleness and fine color. One queen 75c; dozen, $8.00. Breeding queens, $6.00 each. Emil W. Gutekunst, Colden, N. Y.

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Liquid paste for sticking labels on tin or glass. We guarantee it to give satisfaction. Will keep indefinitely if kept closed. Many satisfied users. Solve your paste troubles with some of our

STICK-TITE PASTE

Quart Can 65c Mailing Wt. 3 lbs.

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American Bee Journal
HAMILTON, ILLINOIS

Queens 25c each any number

If you have never tried Palmetto Queens give them a trial. Three-banded Italians only, every one guaranteed. Costs nothing to have your order booked in advance. Canadian customers please send money orders or 15% exchange.

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$1 RIDS YOUR LAWN of WEEDS
WEEDS Go in 24 HOURS
Here's a positive WEED KILLER—guaranteed to RID YOUR LAWN of dandelions, buckhorn, plantain, dock, thistle and other tap-rooted, and crown-rooted WEEDS in 24 hours.
WEED-TOX Does Not Harm Rest of Lawn
Easily and quickly applied without injury to grass or other desirable vegetation, making it impossible for weeds to revive, even after only one application. One dollar bottle is sufficient for the average lawn. Sent complete with applicator; ready to use, no mixing, no fixing, no sprayer, nothing else to buy. Send $1 today.
V. & M. PRODUCTS CO.
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ONE DROP does the WORK

Moore's Strain

Leather Colored Italian Queens

Superior Stock

50c each

World-wide reputation for honey-gathering, hardiness, gentleness, etc., since 1879. Safe arrival and satisfaction guaranteed.

J. P. Moore
MORGAN KENTUCKY

CAUCASIANS

have all the good traits of Italians, plus extra gentleness, less swarming, more prolific, longer tongues, less robbing and more dependable workers. Wintered here out of doors, and bred in a climate like their native land—severe winters, cold windy springs—thus insuring their good qualities. Breeders from Prov. Terek, Caucasus.

CARNIOLANS

Prolific at all times, very gentle, best of winterers, build up rapidly during the changeable weather of spring, build beautifully white combs, and most excellent workers. One customer reports an average of 435 lbs. per colony, extracted, spring count, for the whole yard of over 50 colonies. Have supplied many state Agricultural Colleges and Experiment Stations in U. S. and Canada with them. My own and Jan Strgar imported strain.

Prices both races:

1 untested queen	$ .50
6 untested queens,	2.75
12 untested queens	5.00
Tested queens, each,	1.00
Breeders, (1932 reared)	5.00

Both these races give better results in northern and western sections of our country where the flow comes early. Use some Caucasians or Carniolans among your Italians, both will improve your Italians in gentleness and honey gathering. These times necessitate your using the most dependable bees as well as efficient management.

Albert G. Hann
Glenn Gardner - New Jersey

An Easily Managed Home for Your Bees

A good hive has all the room the queen needs and also room for food and young. Often over 100,000 cells are needed at one time. No hive but the Modified Dadant gives this room in one compact body. It produces big colonies and big crops.

Send for this sixteen-page booklet telling how the Modified Dadant Hive is used by successful honey producers.

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QUEENS 30c Each

Old Reliable 3-Banded Italians

Send me your order. I rear queens to please and gain your patronage. Try them. If you are not satisfied return them and I will replace them or refund your money—you are the judge. Guaranteed pure mating.

2-Lb. Packages young baby bees with young select queens $1.25
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PRACTICALLY NON-SWARMING

75c each. Guaranteed purely mated or a free queen, means tested in the end. Good to fair breeders, $5.00, $3.00, $2.00. Virgins, 3 for $1.00. Ask for list with testimonies. Satisfaction guaranteed.

E. E. MOTT & SON, Glenwood, Michigan

When Writing Advertisers Mention The American Bee Journal

of nectar that they can get honey from it. Then all the races are about equal on it.

Regarding size, those races are very nearly alike. We would recommend the pure leather-colored Italians above all the others. Next we recommend the Caucasians.

HONEY INSTITUTE

I am interested in the progress the American Honey Institute is making, but the list of contributors seems short when you consider the number of beekeepers in the country who are benefited by its work.

While I'm only as yet, a "small" beekeeper, having started last year. I have sent my 1933 pledge to the Institute, knowing full well that every dollar donated is well spent. Really, I should say "invested" instead of "donated," for there is a definite return.

They offer the Institute insignia newspaper cut to members at $1.00.

I believe many more contributors could be obtained, especially so among us smaller beekeepers, if a membership pin, similar to a Red Cross pin, with the Institute insignia on it and year date, to be given out each year upon receipt of contribution. If this would prove an added expense, a few cents more per ton might be tacked on the fee.

Beekeepers are just as egotistical and vain as any lodge member, and I'm sure all would be glad to obtain a pin and display it and be recognized as such, creating an added interest in honey.

Wouldn't it be fine if such a thing could be pushed at state meetings this year, and the following year all those in attendance, be labeled with these emblems?

MICHIGAN.

Answer.—I am in receipt of your letter and am well pleased with it. I wish all our beekeepers would feel as you do. Perhaps reading this letter in the A. B. J. will induce some of them to subscribe to the American Honey Institute.

We can use all the help that we get.

CURING HAMS WITH HONEY

Some years ago I read something about curing hams with honey in the American Bee Journal. Could you give me some information as to how it is done?

ILLINOIS.

Answer. — Honey-cured meat: Take one piece at a time in a dishpan and apply a coating of honey, either by hand or swab. Then apply as much of the following mixture as will stick to the honey:

5 pounds salt.
2 ounces black pepper.
1 ounce cayenne pepper.

At the end of about three weeks it may be hung and smoked with large pieces if it looks "fresh," give another application.

This is taken from the Texas Honey Book published by the Texas Honey Producers' Association.

We cannot find any recipe of this kind in the American Bee Journal.

USING OLD COMBS FOR NEW BEES

Last July I bought five swarms of bees in old eight-frame hives, from a neighbor.

I tried to transfer to new modified Dadant hives with foundation, but, as dry weather shut off the honeyflow, only a part of the foundation was drawn out. These bees are now dead. Smothered by snow over the entrances.

I intended to buy package bees to make a fresh start.

I have about 30 pounds of honey in the old frames.

Should I put the package bees in the hives with the partly drawn foundation, the old dark and shallow combs, or both? Some of the old combs are mouldy. Would this be dangerous?

There will be a moderate honeyflow here within two weeks after I expect the bees to arrive. WISCONSIN.

Answer.—You made a mistake to try to transfer bees in July or August. It succeeds much better in May and June in our northern states.

Yes, you can put package bees on those combs. But the mouldy combs will hardly do until the bees are well established in the hives. Then if you put one mouldy comb at a time in each hive, they will clean them up.

Make sure that your bees are not short of stores when you have them, even if you have to feed a little before the crop begins. A package of bees has very little hope if it does not get something to eat right away after arrival. They not only must eat, but they must have something to help them rear brood as soon as they are hived.

USING CARBON DISULPHIDE

I have a few colonies of bees which are diseased and aim to kill the bees and extract the honey. If I use Carbon Disulphide will the taste of the honey be disagreeable or not affected? IOWA.

Answer.—I have never used Carbon Disulphide in the way you indicate, but I do not believe that it would affect the flavor or odor of the honey, after airing it for a while.

We use brimstone to kill the bees when we wish to get rid of them. We do not extract the honey afterwards but melt it up and render the wax. The honey has to be heated for an hour or so, to render it immune.

REQUEENING

Will you please tell me what is best to do?

I have three stands of bees that I bought last February at a sale. There isn't so very many bees, the combs are rather old.

Do you think it best to requeen now, or let them go 'till fall?

Would I get good results this year if I requeen now, or do you think it best to put them on full sheets with a new queen?

Would it be all right after the queen gets to laying good to put another hive body underneath and then shake the bees and queen below, and then put a queen excluder on? Would I get more honey?

KANSAS.

Answer.—I believe that you will do best by letting those bees build up and wait till fall to do any queen changing. Of course, if some of the combs are very old, it may be advisable to change them, using comb foundation in their place. It is especially advisable if some of those combs are drone combs, even if they are not very old. You should rear as few drones as possible.

As for the queens, unless they are old and not good layers, I would keep them till the end of the honey crop. Use supers and stories when needed.

CLEANING EQUIPMENT READY FOR BEES

I have about 12 double ten-frame bee boxes with frames in which I had bees last year, and they all died last winter I think with foulbrood, so I haven't any bees this summer, but would like very much to get some next spring. Now would you please tell me how I can clean those boxes and frames so there will be no danger of the bees getting foulbrood when I put them in next spring? They are all new boxes and new frames, only used two years.

MISSOURI.

Answer.—The only method which is positive, to prevent disease from being transmitted from those old hives is to cut the combs out of the frames, melt them up into beeswax and have them rebuilt into comb foundation.

The frames and the hives should be singed with fire. Some people coat the inside of the hives with coal oil and set fire to it, choking it out when well lighted. But we prefer to use a tinner's torch to burn the inside of the hives so as to destroy any germs that may be in them.

By this method you destroy entirely all traces of foulbrood.

Some people recommend the treating of

the combs, but this method has not been entirely successful.

BEES BURNISHING WOOD

1. Of late I have noticed the bees on the front of the hive standing in the same place and moving a slight bit forward then backward, doing this for a good while at a time, are you able to give any reason for this?
2. On page 299 of the American Bee Journal of this month under "Crop Prospects"—"In eastern Iowa conditions are not good, etc.," does this imply that in the places where sweet clover is planted that there is every reason to look forward to a good crop of honey?
3. Will frequent rains hurt nectar secretion in clover?
4. Length of Honeyflow of Sweet clover and when is best time to remove surplus?
5. Do you know of any honey producing plant that grows in Dubuque County and blooms about in September?

IOWA.

Answer.—1. Many people have wondered at the actions of bees stepping forward and back for hours together. The most probable correct answer is that they are burnishing the wood after having applied more or less propolis on it.

2. Wherever there is sweet clover, it is quite probable that one may count on a good crop. In fact, where both sweet clover and white clover are blooming, the bees appear attracted more to the sweet clover than to the other kind.

3. Frequent rains wash the nectar out of the blossoms, so that it takes usually about 24 hours before the bees can find nectar again. But the rains lengthen the time of blooming, so that in the long run a rainy season proves beneficial, if a few days of hot, fair weather finally come.

4. Differences in locations and in flow make it impossible to answer this correctly.

5. Several honey plants bloom all along the low lands of the river, in September: Persicarias, Spanish needles, goldenrods, asters, iron-weed are the principal ones. The first named, the persicarias, are also called "heartsease."

Comb Honey Is An Intestinal Corrective

By Bro. Alphonse Veith,
Indiana.

Here is an answer to the question brought up by consumers sometimes concerning whether comb honey is good because one has almost the necessity to swallow the wax. Some people keep the wax gathered in the mouth and remove it; only eat the honey, because they think the wax is harmful.

Of course, this is not so. The wax has a decided tendency to be an intestinal corrective as in the experience of Brother Alphonse Veith of Indiana who reports a case in his own observation. We quote from his letter.

"A friend of mine answers the question: 'Is comb honey good to eat?' in the affirmative by stating that he cured himself of an obstinate case of constipation by use of comb honey for breakfast. It worked like a cathartic without the bad consequences."

This is such a commonly repeated experience, and so often observed by physicians in their work, that we can take it without question as a fact in favor of comb honey.

Better Bred Italian Queens

25c *any quantity*

Special introductory offer ..... 10 queens for $2.35
3-lb. packages with queen any quantity, $1.65. 2-lb. packages, $1.20

Orders filled promptly or money refunded.

CALVERT APIARIES :: CALVERT, ALA.
A. L. Webb, Prop.

BEE SUPPLIES

PRICES are lower than they have been in many years. Now is the time to send us your orders for the same high quality supplies at lower prices.

If you have not received a copy of our 1933 price list, it will pay you to write for one before placing your orders.

A. H. RUSCH & SON CO. :: REEDSVILLE, WISCONSIN

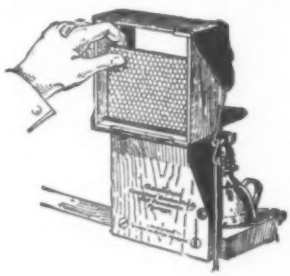
QUEENS

We mean money can buy none better. Three-Banded Italian, with a long honey gathering record, in extensive Apiaries of the northwest is where our breeding stock is carefully picked from hundreds of Honey producing colonies, they have proven to build the long hard winters, they always gather a crop of honey, they are bred by the most skillful breeders, try them to be convinced. We absolutely guarantee pure mating, safe arrival, and perfect satisfaction in U. S. A. and Canada.

SELECT UNTESTED
1 to 100 — 30 CENTS EACH

BROWER BEE CO. -- BANGOR, ALA.
References: R. G. Dun & Co., any Bank of Birmingham, Alabama.

RAUCHFUSS Combined SECTION PRESS and Foundation Fastener



Pressed steel construction press that also uses a hot plate for fastening foundation in the section. Invented by that foremost comb honey producer, Herman Rauchfuss of Colorado.

We have a few of these presses on hand which we are offering at a specially low price while they last.

Our price postpaid, **$3.25**

DADANT & SONS :: HAMILTON, ILLINOIS

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June Queens are Good Queens

Not too late to get good results from package bees where you have a late flow.

TWO-POUND PACKAGES, $1.50 Ea.
Lots of ten, $1.40 Ea.

3-POUND PACKAGES, $2.00 Ea.
Lots of ten, $1.90 Ea.

Every package will be supplied with young bees and a select queen that is guaranteed against supersedure for one season.

QUEENS

35c Ea.; Three for $1.00; 100 for $30.00.

Pure mating, no disease, safe arrival and satisfaction guaranteed.

The Crowville Apiaries
ROUTE 1 WINNSBORO, LA.

THE BEEKEEPERS ITEM

The Southern beekeeper's own magazine, but read by honey-producers everywhere. Combined with the American Bee Journal makes a combination that covers the beekeeping field.

Send $1.10 and get both magazines for a full year.

BEEKEEPERS ITEM, San Antonio, Tex.

3 QUEENS for $1

1 or 2, **35c each.** Large quantities priced on demand. The very best, Select Untested, **"Honey Girl"** Italian Queens.

$2.75 for 5-lb. Pkg.

With queen and two combs brood.

This large swarm will store honey immediately.

3-lb. pkg. with queen, on comb brood $1.75

4-lb. pkg. with queen, on comb brood $2.15

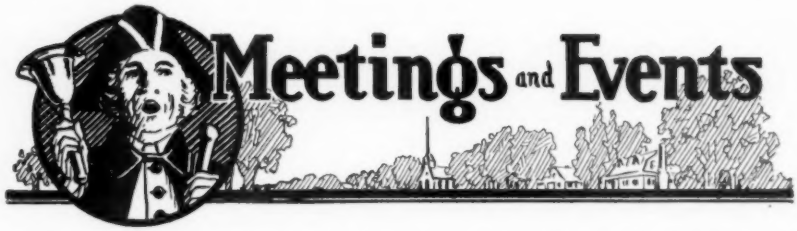
Will ship combless if preferred.

Every package will be filled with pure bred **"St. Romain's Honey Girl"** Italians. Queens, quality unsurpassed. The result of years of selective linebreeding.

Safe arrival and satisfaction guaranteed.

"St. Romain's Honey Girl" Apiaries

HAMBURG, LOUISIANA



Higgins Honorary Member in Washington

C. W. Higgins, of Wapato, active in work of the Washington State Association for a number of years, has been voted honorary member in recognition of his twenty-eight years of service. He has been president of the association for two terms. Yakima County beekeepers have voted to send Mr. Higgins to Olympia during the sessions of the state legislature to represent them. Eight changes in the bee laws are to be asked this year: the transfer of bee inspection from Washington State College to the State Department of Agriculture; the removal of the research provision of the law; clarification of the duties of the inspector; adoption of burning as a requirement; certificate of health for bees entering state; certification of bees moved within the state; standardization of honey containers.

I. L. Neil, Washington.

Brief Report of Seventieth German Beekeepers' Day at Goerlitz

July 30, 31, and August 1, 1932, united the German beekeepers at their seventieth annual meeting at Goerlitz, Silesia. Papers on various beekeeping subjects were presented. There was also a large exhibit of bee products and bee supplies.

Dr. Zander, Erlangen—"The Problems of Bee Pasture Improvement." Since beekeeping is in such close relationship with agriculture, more attention should be given to the selection of plants producing nectar on the farms, particularly in relation to pastures, forage crops, roadside planting and forestation.

Dr. Beutler, Munich—"Nectar Examination." Through chemical analysis of plant nectars during 1927-28-29, it was determined that the sugar concentration of the nectar in different plants varies greatly. The sugar concentration of nectar is fairly high and sucrose is a frequent constituent.

Dr. Himmer, Erlangen—"Beekeeping and Pest Control." Combating plant pests by mean of chemicals gained enormously after the war, but not without danger for other animals, particularly bees, which are constantly exposed to injury. Sprays applied to orchards, fields or vineyards outside the blooming period do not endanger bees. Airplane dusting has been shown to be especially detrimental. Pollen is the main carrier of the poison.

In the case of forest dusting, bees are safe only if moved at least five miles from the area dusted, and they should not be returned there until brood rearing has ceased for that year.

Dr. Goetze, Mayen—"Bee Clover and Clover Bees." The unfavorable difference between the tube length of the red clover and the tongue length of the honeybee results in a defective seed yield and a poor nectar return. Research is trying to produce a short-tubed red clover and a long-tongued bee, and some results have been obtained in both directions. Certain races of bees from the Caucasus and from Carniola have considerably longer tongues than central and north German bees. Linhard's "bee clover" has distinctly shorter tubes than ordinary red clover. Although the longer tongued bees are able to make use of the short-tubed clover blossoms, a perfect match has not been obtained so far.

Theodor Weippl, Vienna—"The Extraordinary Over-Consumption of Food During Fall Feeding of Bees." At normal activity a bee consumes daily from 10 to 15 mg. of food. When 50/50 sugar syrup is fed, the consumption rate is reported as 40 to 50 mg. The cause is the necessity to evaporate 30 per cent of the water, calling for an increased display of energy. This amount of labor is considerably lowered if the syrup is made from ten parts of sugar and only seven or eight parts of water.

Karl Koch, Berlin—"What Causes Swarming?" Observations on swarming colonies were made over a period of several years. The swarming instinct awakens when the peak of the colony development is reached during May or June. The queen, exhausted from laying to produce many thousands of eggs, refuses to take the food offered to her. This causes enormous nutritional disturbances within the colony, since the amount of brood decreases each day. According to Dr. Roesch, such food is fed by nurse bees with their jelly-producing glands developed to the highest activity in the age from six to twelve days. These bees, unable to dispose of their secretion because of the reduction in blood at this time, become enriched and the develop-

ment of their rudimentary ovaries is caused, which contributes to swarming.

Extracts by Erwin C. Alfonsus, Wisconsin.

Idaho Honey Producers' Association Meet

A prominent feature of the annual meeting at Boise, Idaho of the Idaho State Honey Producers' Association, January 11 and 12, not on the regular program, was a foray in regimental formation by a thousand bees, somewhat peeved by rough handling of a bell boy, who engaged in massed attack on legislators and lobbyists gathered on the floors of the Hotel Boise, scattering their victims in disorderly retreat.

The bees had been exhibited in a glass case on the mezzanine floor of the hotel, a part of the display of Mrs. H. H. Keck, of Paul, who was demonstrating the uses of honey in home cooking and preserving. At the close of the meeting, while the display was being packed for transportation home, a bell boy carelessly smacked the bee box against a desk, tearing a long slit in the cage. The bees lost no time in getting out of there, and expressing intense dislike of the whole proceeding. No respectors of person, they stung their mistress and drove her to cover.

Next they chased the bell boy headlong down the service stairs, swarmed over the railing and descended into the lobby where they scattered solons and laymen, crying out for quarter, to various safe retreats. Then, the insect warriors buzzed about for a time, and returned to their cage, where they partook of refreshments. Presently, a detail of bell boys, managers and assistants appeared on the battle field, armed with fly swatters, but the war was over.

Sessions of the association were held in conjunction with the Idaho Horticultural society, state florists, and state nurserymen. A joint banquet was held. An important point brought out by speakers for the honey producers was the value of bees as agents for pollinization in fruit orchards. Discussion as to the need for a state bee inspector was had and legislation urged in this direction. New officers elected were H. H. Keck, Paul, president; Roy Rabbit, Caldwell, vice president; J. M. Stark, Middleton, secretary-treasurer.

Sweetser.

Tar-Heel Beekeepers Hold Annual Meeting

The North Carolina Association convened on January 27th at State College Station, Raleigh. C. L. Sams presided in absence of President Hawks who was taken ill with influenza and had to return home without

(Please turn to page 234)

HART
CRYSTAL CLEAR
HONEY JARS

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SELECT UNTESTED ONLY—WITH THEIR LIVES BEFORE THEM.

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PACKAGE BEES	1 - 10	10 - 100
2-POUND	$1.25	$1.15
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Overweight, Baby Bees, no queens, deduct 25c per package from above.

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Safe arrival and complete satisfaction guaranteed on every package and queen shipped. Health certificates with every shipment. A bargain in every package, over weights are always given. No order too small to be appreciated and we are prepared to render the best of service. Order direct from this advertisement for prompt shipments.

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Order those needed supplies today, from your nearest Root dealer, or if there is no dealer located to serve you, send direct to the factory at Council Bluffs. Our large stock is your assurance of prompt shipment. Eight trunk line railroads assure quick delivery.

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(Continued on page 237)

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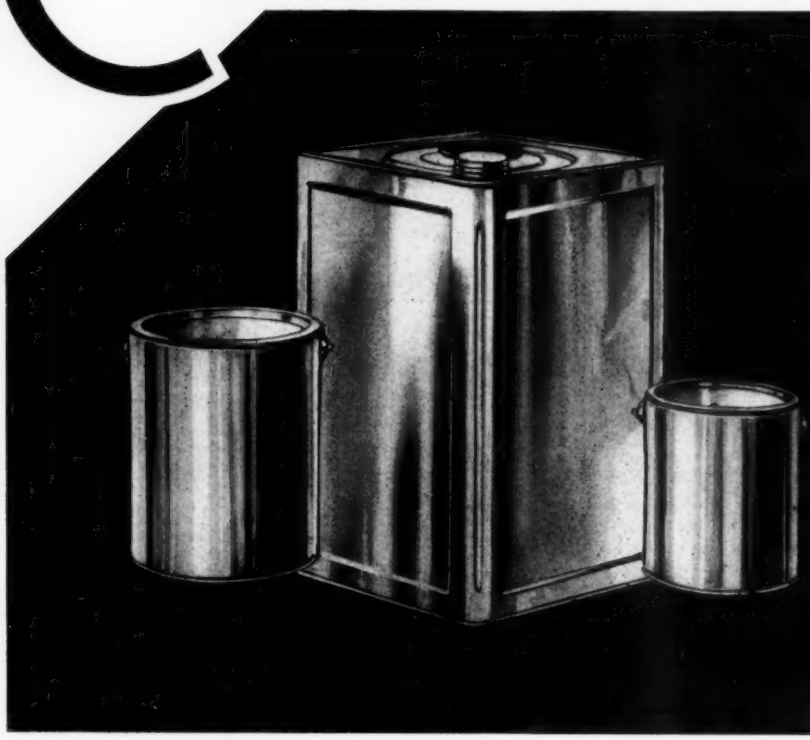

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"IT'S BETTER PACKED IN TIN"

Crop and Market Report

Compiled by M. G. Dadant

For our June crop and market report, we asked reporters to answer the following questions:

1. How have bees come out of winter and in what condition to date?
2. Climate and plant prospects.
3. Much honey unsold?
4. Are prices stiffening and demand increasing?

Conditions of Bees

All in all we would anticipate that the bees came out of winter quarters perhaps in a little worse shape than usual, at least the amount of losses were larger, particularly in the plains states and some sections of the intermountain territory, as well as in some parts of the East. The bees in Texas and some of the other southern states also were extremely short of stores early in the spring and, therefore, should not be figured as up to normal condition.

However, the season has been propitious in many parts of the country for the gradual building up of bees even though it has meant the consumption of large stores of honey. However, in some sections, we find the cold and rainy weather has retarded the bees considerably and they are from one to three weeks behind normal conditions.

Roughly speaking, the New England states and Atlantic seaboard states as well as the central west, have bees in the best condition while those of the intermountain territory and plains states as well as the Pacific northwest, are in the poorest condition.

Prospects

We find that the weather has been unusually dry in Texas, New Mexico, Arizona and in some sections of California, so much so that the bees have not been able to gather honey nor even build up satisfactorily.

In the entire white clover region extending from Maine to the plains states, the long spell of cool and wet weather has encouraged the growth of pastures and we find that white clover, therefore, is in unusually good condition in most instances.

The Atlantic seaboard states as well as nearly the entire South have also experienced similar results although in north Georgia, the honeyflow has been somewhat cut short by the dry weather. Dry weather still seems to continue in Texas and Arizona and New Mexico so that the prospects there are far from normal.

In the intermountain territory although bees are below normal, the plant prospects will perhaps reach normal on account of the heavy snows and rains which abode well for the future. In the intermountain section, the crop comes late at any rate and it may be possible to make up for some of the lost time. The Pacific northwest does not seem to have nearly as good conditions as usual and California has been very badly disappointed in their crop this year. It looks like a short crop although perhaps not quite so short as last year. The orange flow is very disappointing and sage apparently will not yield nearly as much as had been at first anticipated. All in all the California beekeepers are not looking for a normal crop or anything like it.

In Canada, Ontario seems to have fared the worst as to condition of bees and also honey plants and the prospects are not particularly favorable. In the western provinces, however, the rains have brought out the sweet clover magnificently and such bees as were lost during the winter are being far more than made up by the large quantity of packages which are being shipped. We find also a large shipment of packages into the northern sections of the intermountain and plains territory and many breeders are reporting heavier sales than they have ever had for packages.

Honey Unsold

Although there are a good many exceptions, we would state that the amount of honey remaining unsold this year will be as small as it has been in a good many years. There are a few unsold lots in the hands of large beekeepers scattered throughout the country and a few carloads in the intermountain section held for higher prices. As a general rule, however, the amount of honey unsold is negligible and people are looking for the possibility of a new crop with anticipation particularly as prices in other lines are rising.

Honey Prices Up?

Practically all reporters state that there has been no advance in honey prices. The only exception we could find was in the intermountain territory where the demand for carload and large lots of honey has been extremely good during the past thirty days and as a result, the beekeepers in that section still holding honey, have advanced their prices to meet the demand. One reporter stated that he had sold two cars of honey and could now get ½ cent more than he had previously sold for. In many sections of the country while we find no stimulation of prices, still there does seem to be a better demand and honey is moving off readily so as to make way for the new crop.

Conclusion

All in all, it is our idea that bees are perhaps not quite in normal condition taking the country over, but that honey plant conditions are somewhat better than normal and this is particularly true in the white clover regions and along the Atlantic coast. It would appear that the honey crop looking at it as a guess into the future, would more than equal that of 1932. In fact prospects seem to be considerably better although some sections like south and west Texas and states immediately west as well as California and the Pacific northwest, cannot count on a very favorable honey crop and the question still remains as to whether the intermountain territory will be a heavy yielder of honey this year. In the Canadian provinces, the western provinces seem to bulk up better than the eastern as to condition of honey plants.

In all sections, of course, the final determinant is climatic conditions during the honeyflow. Proper climatic conditions in the clover belt should lead to a bumper flow while bad conditions may mean a very light crop throughout the country. We would estimate, however, that the chances are more than 50 per cent for a very desirable honey yield this year.

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Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department, it should be so stated when advertisement is sent

Rates of advertising in this classified department are seven cents per word, including name and address. Minimum ad, ten words.

As a measure of precaution to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisers offering used equipment or bees on combs must guarantee them free from disease, or state exact condition, or furnish certificate of inspection from authorized inspector. Conditions should be stated to insure that buyer is fully informed.

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CARNIOLAN and golden queens, tested, 75c and untested 50c each. 3 pounds of bees and queen, $2.00. 2 pounds of bees and queen, $1.50. Write for price of nuclei.
C. B. Bankston, Buffalo, Texas.

50 CENTS each for Italian queens that produce the true 3-band leather colored bees. Inspected and guaranteed. Queens shipped in my own, popular introducing cage. Write for prices on quantities.
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THREE banded Italian queens, select untested, 50c each.
Alamance Bee Co., Graham, N. C.

ITALIAN QUEENS, 50c. Bees, 2-lb., $1.90. 3-lb., $2.40. Orchard package 3 frames, $3.50, equal 6 lbs. Will trade for honey. Reduced price May 20. Homer W. Richard, 1411 Champnolle, El Dorado, Ark.

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RUSCHILL'S Iobred Italian Queens, 50 cents each. Chas. L. Ruschill, Colfax, Iowa.

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GOLDEN Italian queens, 30 cents each, any quantity. Good honey producers and gentle. A. M. Kelly, Bell, Florida.

CAUCASIAN QUEENS from northern, hardy, acclimated, gentle stock. Produce bees that get the honey Order early. Prices going up. 60c each. Bird's Apiaries, Odebolt, Iowa.

GASPARD High Quality Golden and three-banded Italian queens. Young untested: 1, 50c; 5, 45c; ten or more, 35c each. Tested, $1.00 each. For prices and particulars on package bees, refer to page 113 May issue of American Bee Journal.
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GOLDEN Italian Queens, balance of season, 35c each. Safe arrival and satisfaction guaranteed. Write for prices on June packages. E. F. Day, Honoraville, Alabama.

BASSETT'S Italian queens and package bees. Queens leather colored, bright Italians or Caucasians. Prices for June: One, 35c; three for $1.00; $30.00 per hundred. Every queen guaranteed. Health certificate with shipment. C. Bassett, Prop., IXL Apiaries, Ripon, California.

FOR SALE—Pure Italian queens, red clover kind. 35c each. 3 for $1.00.
Graydon Bros., Route 2, Greenville, Alabama.

HARDY Northern Italian Queens. Over 30 years' experience, personally reared, honest dealing, prompt service. Send C.O.D. One, 35c; three for $1.00. Shipment starts June 25. N. J. Smith, Coopersville, Michigan.

GOLDEN Italian Queens, noted for their gentleness and honey gathering. One, 50c; 6, $2.75; 12, $4.50. Satisfaction guaranteed in U. S. and Canada. Health certificate with each queen. E. A. Simmons Apiaries, Greenville, Alabama.

LARGE YELLOW NORTHERN BRED ITALIAN QUEENS, bred in our northern Ohio climate from queens with 300-lb colony average. These queens produce unusually large yellow bees, very gentle and beautiful to see. Selected with 20 years' experience. Being acclimated, these northerners produce more honey and winter better than southerners. Have never used packing, and all my breeders must survive two northern winters perfectly. Northern bred queens in northern apiaries means more honey and less winter loss. Pure mating, no disease and replacement of losses guaranteed. Select untested 1-10, 85c; over ten, 75c. Select tested, $2.50 each.
Dodge Alexander, Station G, Toledo, Ohio.

MAINTAINING queen yards for our own apiaries, we are offering 200 well fed, carefully reared surplus queens each month, 50c each. Package bees $1.75 for 3-lbs. with queen. L. L. Ferebee, Pineland S. C.

HONEY FOR SALE

HONEY FOR SALE—Any kind, any quantity. The John G. Paton Company, 230 Park Avenue, New York.

FOR SALE—White clover honey in 60-pound cans. None finer. Satisfaction guaranteed. J. F. Moore, Tiffin, Ohio.

HONEY FOR SALE—Keep your customers supplied with honey. We can furnish white and light amber honey at attractive prices. Packed in 60-lb., 10-lb. or 5-lb. tins. Dadant & Sons, Hamilton, Ill.

FOR SALE—Northern white, extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

NEW crop honey. Choice sweet clover extracted. Thomas Atkinson, R. 5, Omaha, Neb.

TUPELO honey; will not granulate. Shipped in any quantity. Anthony Bros.' Honey Co., Apalachicola, Fla.

HONEY—We sell the best. Comb in carriers of eight cases each; extracted, basswood, buckwheat, sweet clover, white clover and light amber. A. I. Root Co. of Chicago, 224 West Huron St., Chicago, Illinois.

EXTRA WHITE extracted, not mixed with capping melted. Geo. Seastream, Moorhead, Minnesota.

CHOICE Michigan Clover Honey. New 60's. David Running, Filion, Michigan.

FOR SALE—Well ripened, extracted honey gathered from clover, carlot or otherwise. Will be pleased to submit sample on request. Also section or shallow frame comb honey in local shipment. Colorado Honey Producers' Association, Denver, Colo.

AMBER extracted, 60's, case or ton.
E. S. Miller, Valparaiso, Indiana.

BASSWOOD HONEY—$3.00 per 60-lb. can.
Henry Price, Elizabeth, Illinois.

MICHIGAN white clover - basswood honey of finest quality in new 60-lb. cans.
Orval W. Dilley, Grand Ledge, Michigan.

BEST white clover - basswood honey, $5.50 per dozen 5-lb. pails. One 60-lb. can, $4.20. F. L. Barber, Lowville, New York.

HONEY AND BEESWAX WANTED

WANTED—A car or less quantity of white honey in 60-lb. cans. Mail sample and quote lowest cash price for same. J. S. Bulkley, 816 Hazel St., Birmingham, Mich.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5 cents a pound for wax rendering. Fred W. Muth Co., 204 Walnut St., Cincinnati, Ohio.

WANTED—Car lots honey; also beeswax, any quantity. Mail samples, state quantity and price. Hamilton, Wallace & Bryant, Los Angeles.

WANTED—HONEY and BEESWAX. Beekeepers will find it to their advantage to communicate with us. Please send samples, state quantity available and prices. CALIFORNIA HONEY COMPANY, Hamilton & Company, Agents, 108 W. Sixth Street, Los Angeles, California.

WANTED—Good quality light amber extracted. Mail sample. State quantity.
E. H. Guertin, 201 N. Wells St., Chicago.

FOR SALE

FOR SALE—Medium brood foundation, 100 lbs., $30.00 Fifty lbs., $15.50. Ten lbs., $3.35. Fred Peterson, Alden, Iowa.

FOR SALE—Used once sixty pound tins and cases. Schultz Honey Company, Ripon, Wisconsin.

FIVE 10-frame plain section supers with 500 B grade 4¼x1½ sections, $5.75.
Rettig Supply Co., Wabash, Indiana.

BARGAIN LIST—Extractors, brushes, smokers, veils, box seats, feeders, section presses, shipping cases, bulletin boards, covers, excluders, frames, etc. Every item in good, usable condition. Priced to sell quickly. Reason for selling, no longer listed in our catalog. Write for free list.
G. B. Lewis Company, Watertown, Wisconsin.

SUPPLIES

BEST QUALITY bee supplies, attractive prices, prompt shipment. Illustrated catalog on request. We take beeswax in trade for bee supplies. The Colorado Honey Producers' Association, Denver, Colo.

PORTER BEE ESCAPES save honey, money, avoid stings; faster most efficient. Sample 15c. R. & E. C. Porter, Lewistown, Ill.

FOR SALE—Comb foundation. Note these new low prices on 100-lb. lots: Medium Brood, 35c; Thin Section, 43c. Also wired foundation. Wax worked at lowest rates. E. S. Robinson, Mayville, N. Y.

DIFFERENT, that's all. Written and published for the instruction of beekeepers. 52 pages of breezy entertaining beekeeping comment each month. One year, $1.00; two years, $1.50. Sample, 3c stamp.
The Beekeepers Item, San Antonio, Texas.

SAVE queens. Safin cages now 15c. Ten for $1.00. Allen Latham, Norwichtown, Connecticut.

THE PINARD NAILLESS queen shipping cage. 810 Auzerias Ave., San Jose, Calif.

WANTED

BARTER honey for typewriter. Send honey sample and price. Queens Typewriter Corp., 25-20 41st Avenue, Long Island City.

WANTED—To trade 160 acres valley land in Oregon for bees, preferably central states. Box x, American Bee Journal, Hamilton, Illinois.

MAN 33, hustler, no smoking, sober, desiring get practical experience, would like work in large, modern apiary for room and lodging. Benizio, 3605 Vernon Ave., Ravenswood, N. Y.

MISCELLANEOUS

PLANS FOR POULTRY HOUSES — All styles; 150 illustrations. Tells you the type to build for your particular locality. Secret of getting winter eggs, and copy of "Inland." Send 25c. Inland Poultry Journal, Spencer, Indiana.

THE BEE WORLD—The leading bee journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy, post free, 12 cents stamps. Membership of the Club, including subscription to the paper, 10/6. The Apis Club, Brockhill, London Road, Camberley, Surrey, England.

HAVE YOU any Bee Journals or bee books published previous to 1900 you wish to dispose of? If so, send us a list. American Bee Journal, Hamilton, Ill.

Is the Laugh on Us or the Jeweler?

I had a good laugh over the picture in the top lefthand corner of page 15 of the January issue. (The picture of the hand with scissors cutting off what we supposed to be the sting of the bee located in the head.—Ed.)

But on looking again, I realized that perhaps the last laugh is with the jeweler company. That "bee" has two wings, the tail end is very flat, and the antennae grow out of the top of her head and are straight and bristle-like.

In other words, she is a poor bee, but a perfectly good gadfly. Here in England anyway, a gadfly's business end is just where the picture shows it. (Now, whose laugh is it!—Ed.)

Annie D. Betts, England.

Scout Bees

I have noticed several articles about scout bees. Here where I live in California, I have had quite a bit of experience with them. Anyone who says there are not scout bees is not familiar with bees. Here about 12 feet on the north side of my house is a locust tree. About 6 feet from the ground where the limbs begin to spread, I nailed two small boards and set hives there to catch swarms.

This year, I got 12 swarms out of that tree. One swarm came in after the 12th day. That is the longest set of scouts I have had so far. It was a dandy swarm of mixed bees.

Once scouts find a location, especially a hive that has combs in it, let strange bees try to get in and they soon drive them away. When it is a big prospective swarm quite a large group of scout bees stay around both day and night.

I have raised the cover of the hive during the morning and one would think that there was a small swarm in the hive. Last year out of five small swarms, I made one colony and they produced me over two 10-frame supers of honey.

Joseph Ferreira, California.

By G. H. Cale

TODAY as I look out of the window, locust, which is fairly abundant in this town, is in full bloom and smells so sweet that no other odor has a chance to get through. Bees are working in great haste to get nectar from it. Locust does not yield consistently but when it does yield, it seems to be copious.

— o —

Last week the bees were robbing and some early supersedure swarms bothering us because it was so difficult to see into many colonies without great trouble. To day it is possible to look through every colony without care for robbers. Such a change in a short time. (Three swarms in shop yard today.)

— o —

Clover looks very good. The best since 1927. Not so abundant but of vigorous growth and with more moisture than necessary to continue through the blooming period. So much rain this spring to date that many farmers have not yet planted corn. There will be considerable June corn this year which usually means a honey season.

— o —

A little trick while feeding packages this spring was to put the crate of packages up on end longways and brush the wires of the cage between the holding slats with syrup until the bees were quiet; then the packages were taken apart to distribute to the hives. Use a large paint brush and an ordinary water pail of syrup. Feed right out in the open. There does not seem to be much robbing caused by syrup in this way.

— o —

Another little package stunt which was suggested by Kirlin was to give late packages a comb of brood and bees from healthy colonies, sometime in their early history, to help them up the grade and make them producers that much quicker. It works.

— o —

From what we are able to observe about packages here in our section, those packages do best which have the queens laying about ten days before fruit bloom. Fruit bloom this year was the 25th of April.

— o —

It pays to keep a stock-tight fence around the bee yard when on rented property. This last winter one of our yards was made a routing ground for hogs. The owner did not think it would do much damage. It did plenty. The hogs ruined the ground in the yard and disturbed the colonies, upset some; bees were constantly flying out and chilling, and as a result, the colonies were very weak in spring, many of them having to be united. One experience like this is enough. A good three-wire fence of four pronged barbed wire is sufficient and does not cost much.

— o —

Ever kill bees with sugar syrup? We have. Sugar syrup left in pails in the honey house from colonies where it was not used the year before. It turns black but seems yet to be sweet. However, when fed to the bees, it kills the brood and in one or two instances almost destroyed the colony. Whenever sugar syrup in pails is set aside and gets black, better pour it out. It's not good to use.

— o —

We have found the Caucasians this year to be early swarmers under weather conditions that have prevailed this spring. Rainy days during spring flows from willow, red bud and fruit bloom with bees shut in and not able to go to the fields. Italians did not swarm under these conditions because of the shortage of stores which prevailed this spring but the Caucasians did swarm and we do not like this feature about them. Our spring weather was also cold and it made it very hard to examine Caucasians with the abundance of propolis and glue with which they tie things together, fastening bottom bars to bottom boards and frames to side walls. It's too easy to destroy equipment this way. On the whole, we're beginning to wonder whether we like the Caucasians or not any more!

— o —

Ever have a swarm return to the wrong hive? Recently we caught the virgin from a second swarm hanging in a tree. The bees returned to what they thought was their hive. It did look the same but it was not their hive. They missed it by one row so added themselves to an already strong colony. They went right in, made themselves at home and both families seem to get along quite peaceably.

Why Haven't We Had This Kind of Hive Before?

That's the common comment when beekeepers see the new **FROST KING** hive. Modern insulated construction, but takes standard fittings. Illustrated circular and prices yours on request. A post card brings them, or mail the coupon.

The LOUDEN MACHINERY COMPANY, 101 North B Street, FAIRFIELD, IOWA

Send details on the FROST KING hive—no obligation to me. I own_____colonies of bees.

Name _____

Address _____

Queens { **Better Queens**

High grade, dependable, Three-banded Italians. None better. **35c each. 3 for $1.00. 12 for $3.95.**

Every queen reared to please you and gain your orders. Try them, you too will like them.

G. H. Merrill Apiaries, Greenville, S. C.

ACCREDITED QUEENS

Best Honey Producers. Swarmless, Gentle, Never had disease of any kind. Price Balance of Season up to 50, 35c each; 100 lots, 30c each. Guarantee safe arrival, satisfaction.

Taylor Apiaries -:- Luverne, Ala.

Extra Yellow Italian Queens

Health Certificate and Satisfaction Insured

Over fifteen years a breeder. Prices, 1 to 11, 70c ea.; 12 to 23, 60c ea.; 24 to 36, 50c ea.; over 36, 40c ea. Tested, $1.15 each.

HAZEL V. BONKEMEYER

Route 2 *Randleman, N. C.*

Are You Asking—"How Shall I Sell My Honey?"

The best market is the home market, and there honey well packed in good looking containers sells best.

Our cans, glass, cartons, pails, and selling helps will turn the market your way.

Get your copy of our Fall Price List and Selling Helps Folder. Either price list or folder of selling helps FREE for the asking.

Send for your copies to

Dadant & Sons, Hamilton, Illinois

MIDDLE TENNESSEE APIARIES

OFFER LEATHER COLORED ITALIAN QUEENS BRED FROM MOTHERS IMPORTED FROM NORTHERN ITALY.

1 to 6 queens, 45c ea.; 7 to 25 queens, 40c ea.; 26 to 50 queens, 35c ea.; 51 to 75 or more, 30c ea.

JOE B. TATE & SON

1029 LISCHEY AVE., NASHVILLE, TENN.

ILGENFRITZ QUEENS

have been developed from a strain used and highly recommended by that Master Comb Honey Producer—Samuel Cushman.

"They have everything desired in an Ideal Comb Honey Bee," said Mr. Cushman.

Untested, 75c each.

M. P. Ilgenfritz, Jr., Castleton, Md.

News Notes of American Honey Institute

An Important National Convention

The American Medical Association will hold its annual convention in Milwaukee, June 12 to 16. Mrs. Jensen of American Honey Institute will be in the Kellogg booth, through the usual courtesy of Miss Barber of the Kellogg Company, to meet doctors and to serve honey cookery together with Kellogg's Kaffee-Hag. Special honey material will be given to those interested.

American Home Economics Association meets in Milwaukee also, June 26 to 30, and the Kellogg Company again makes it possible for the Institute to have an exhibit to meet teachers, extension workers, home demonstration agents and research workers to get them interested in honey. Travel expense will be at a minimum because of the nearness of Milwaukee to Madison which is now headquarters of American Honey Institute.

Cooking School at Beloit

2500 women attended the four-day session of a cooking school at Beloit during the week of April 20th. Never have I seen such a turn out. The Institute, through the secretary, assisted in platform work in the afternoon of the third day and the afternoon and evening of the fourth day.

This was a real newspaper cooking school. Honey was very much in evidence during the school and the homemakers were shown how honey dishes were quickly and economically made. Reports from local stores indicated that two were completely sold out of honey after the first honey demonstration and another at the end of the second demonstration.

National Honey Week Dates

The dates decided on for National Honey Week this year are November 13 to 18. Mark them on your calendar and start plans right now. The National Honey Week program is ready. Get a copy from American Honey Institute, 417 North Few St., Madison, Wisconsin. If you need printed matter or programs, make your needs known early so the Institute can order accordingly.

Foreign Beekeepers Assist American Honey Institute

An English one pound note was recently donated to the Institute by J. W. N. Read and Edward H. Read of Ponta Delgada, San Miguel, Azores who wrote Mr. Stover last January "We are far away but we would like to help in a common cause."

It is inspiring to know that beekeepers abroad think enough of the industry to support a publicity agency such as the American Honey Institute. Leonard Harker of England submitted an article for the Journal and wrote "If there's anything coming to me, please pass it over to American Honey Institute as my donation."

A quicker response from beekeepers in this country would be helpful just at this time.

Honey Divinity Cream

1 cup sugar
½ cup honey
⅛ teaspoon salt
1 cup marshmallows
¼ cup water
1 egg white

Combine sugar, honey, water and salt. Boil to soft ball stage. Add marshmallows, which have been cut in small pieces. Pour over stiffly beaten egg whites. Beat until thick and creamy.

This honey cream may be served with ice cream, custards, gingerbread, pumpkin pie, or butter cake. The cream may be stored in jar and placed in refrigerator, where it may be kept.

C. J. Oldenburg, Minnesota.

Honey Cake

Two pounds of dark honey, two ounces melted shortening. Disslove one teaspoon allspice, one teaspoon salt, one level teaspoon baking soda, one-fourth pint warm water, and add one-half cup chopped candied lemon or orange peel. Pour mixture into one and a half pounds sifted bread flour. Bake in slow oven one and a fourth hours in two buttered loaf pans. If you add one package of currants, one package raisins, one ounce melted shortening, one-fourth pint water, nuts if you have them, you have three fruit cakes. When cool, ice with any kind icing. The honey cake improves with age.

Anna Schrutek.

(From Rural New-Yorker, June 20, 1931.)

Meetings and Events

(Continued from page 227)

attending this meeting. Eight beekeepers from Virginia were also in attendance, including T. C. Asher,

Brookneal; C. L. Hall, Halifax; Henry W. Weatherford of Vernon Hill. Mr. Weatherford spoke for the North Carolina Association giving his method of comb honey production.

Mr. Sams gave a talk on "Beekeeping in North Carolina," pointing out the great variation in nectar secreting regions, and describing some of the better locations for honey. Unfortunately Secretary Prof. F. B. Meacham met with an accident in his laboratory severely burning one side of his face with acid. He appeared just before adjournment with his report and recommendations. Prof. Meacham has the sympathy of the Associations and their wish for a complete recovery.

The North Carolina State Association is one of the strongest supporters of the American Honey Institute. Beekeepers who are not members of the Association are traitors to their own success, for in supporting it, they also help support the greatest institution ever organized for solving our marketing problems, the American Honey Institute. A. D. Hiett.

North Dakota Beekeepers Endorse Appropriation for Inspection

The members of the North Dakota Association at a recent meeting in Fargo went on record endorsing the maintenance of an adequate state appropriation for bee inspection work. Prof. J. A. Munro, State Inspector and Entomologist appeared before the appropriation committee at Bismark in defense of the bill which provides for inspection. The meeting was well attended at Fargo.

Virginians See Fatal Duel of Virgins

Virginia beekeepers in attendance at the annual meeting at Lynchburg, January 25th, took a special delight in the new four reel film "The Realm of the Honey Bee" by the Department of Agriculture, a most delightful presentation of colony life, showing modern methods of honey production, sources of nectar, fruit pollination and its relation to the honey bee, variation in honey, care of honey, food value of honey, etc.

When the gavel fell at 9.30 of the 25th, President James Vinson had an interested audience. The following officers were elected: James Vinson, President; W. A. Caldwell, Vice President and John H. Protheroe, Secretary-Treasurer.

The following resolutions were presented: Support of American Honey Institute, Acceptance of U. S. Grading Rules, Continued protest against corn sugar legislation, Commending work of State Specialist, Henry W.

(Please turn to page 237)

Chance!

You may buy bees and queens that are highly advertised at a low price, but when the season's crop is harvested will you be satisfied? Will your year's work and investment show a profit? Will the time you spend with your bees be a pleasure or a disagreeable task? Will you know next season where you can buy bees and queens without guessing?

All of these questions can be answered with a YES if you buy from L. L. FOREHAND. He has spent twenty years perfecting a race of bees that can not be beaten for honey gathering, gentleness, beauty and disease resisting.

L. L. Forehand will guarantee every package of bees and every queen to reach you in good condition and to give perfect satisfaction or will replace without cost or refund every penny you have paid out.

Our prices are lower than ever before. Let us quote you on your needs.

L. L. Forehand Apiaries
Jesup, Georgia

Accurately Made Bee Supplies for Western Canada Beekeepers

Special Equipment Made to Order.

Write for Free Catalogue.

S. P. HODGSON & SONS
NEW WESTMINSTER, BRITISH COLUMBIA

Your Last Chance

To buy bees and queens at bottom prices—they will advance before 1934 season, fill your empty equipment now and be ready to get a good honey crop next season, also requeen, it will pay you.

3-Pound Packages with Queens, $1.50
Just right for late increase.
First quality queens, select untested, **25c any number.**

MERRILL BEE COMPANY -:- Buckatunna, Mississippi
(Mississippi's Oldest Shippers)

No Cash Needed!

I will accept your wax in trade for queens, package bees and bee supplies. Send me a list of your needs and I will quote you my very best offer.

WALTER T. KELLEY

QUEENS, 25c each

Young, 1933, laying, three-banded Italians guaranteed to please you.

GULF COAST BEE CO. Houma, La.

The POSTSCRIPT

GOSSIP ABOUT THE OFFICE IN THE MAKING OF THE MAGAZINE

Out here on the farm I miss the gossip around the office, but I find many of the things which we always miss in town. In early May we have the songs of the Harris sparrow, a common migrant which I have never seen at Hamilton in the fifteen years that I have spent there. It remains but a short time, and then moves on to its Canadian summer home. The lark sparrow spends the summer here but for some reason it also shuns the region east of the Mississippi River. It is strange how local is the distribution of some of the common birds.

— : —

The blooming of the spring flowers is a never failing source of interest to me. I am at a loss to explain why the bees should work the Dutchman's breeches so hard some seasons and yet not a bee have I seen on that flower this spring. The bees are visiting the toothwort which is blooming at the same time and ignoring Dutchman's breeches entirely. There is much yet to learn about the behavior of plants in the secretion of nectar.

— : —

It is some change from the office to the farm. The day's work at the office begins at eight o'clock. A market gardener has to get up in the morning and things start moving around here at about five or five-thirty. Melvin usually starts to town with his first load for market at seven. The six hour day is not for the farmer. At this season it's more likely to be sixteen.

— : —

Reports indicate that the honeydew from the Douglas fir does not always contain Melezitose. There is a limited demand for this product and certain specialists are seeking honey containing it. One buyer writes me that he will postpone further effort until the next crop is harvested in the hope that there may be a flow containing it. Melezitose is used in the study of certain organisms and their metabolism on various sugar media. Because the product is rare it is not always easy to supply the very limited demand.— : —

A Pennsylvania reader writes in regard to the method of mating a young queen in an upper story over a strong colony, as described in the book Practical Queen Rearing. Like some others, he reports the method as a failure with him. It usually worked for me without trouble, but later experience demonstrated that better results come from putting the old queen above the queen excluder and leaving her in the upper story. The ripe queen cell is then left in the brood chamber. When the young queen emerges she goes out for her mating flight through the main entrance of the hive and is seldom lost.

— : —

With the prospect for a honey crop in Iowa the best for many years, the bees are backward in building up because of the late spring. How rare are the seasons when everything favors the bees. But few balmy days have come so far this spring. Much of the fruit bloom came with days that were cloudy and cold.

— : —

This is a busy time at the Pellett Gardens. Melvin has eight men and a boy at work, not counting me. I am finding some sore muscles that have not been heard from for some time past. A garden farm is no place for a lazy man. Everywhere one turns there is something crying to be done. I try my hand at a dozen different jobs every day, not staying too long with the same one.

— : —

Reports indicate that the orchard package of live bees has not come up to expectations for pollination purposes. Since most fruit growers lack any interest in bees except for the one purpose, they want to get the bees as cheaply as possible. The orchard package was designed to serve that purpose and then be thrown aside as of no further use. Perhaps some breeder may yet design a package which will serve the bees well for a hive during the brief time of fruit bloom. So far reports indicate better results with full colonies.

— : —

The queen breeders have unusual opportunities for observation of bee behavior. I have been interested in a letter received from J. F. Diemer in which he states that when the larva in a capped queen cell is dead, the bees will open the cell at the end. I presume from that that he believes that cells opened at the side are cases where the bees wished to remove a living larva. Who has made observation on this point?

— : —

A question is raised as to where information can be obtained concerning the details of the life of Henry Alley. Although Alley edited a magazine and wrote a book on bees, but little is known concerning his private life. Men like Doctor Miller reveal much of their own personality in their writings and leave abundant material for the biographer. Alley confined himself to a discussion of bees and told so little of himself as to offer but little help to one who would know about his life.

— : —

In many mid-western localities there has been a wonderful bloom from dandelion during May. On the days when the bees were able to fly much nectar and pollen have been carried to the hive from this source. A beekeeper is likely to regret the energy with which the average householder digs these plants from his lawn, but he is encouraged by the persistency with which the dandelion reestablishes itself. Dandelion is one of the most valuable plants to the beeman in localities where it is abundant. It yields freely of much needed stores at a time when the bees are greatly assisted in building up in preparation for the main honeyflow.

— : —

An occasional case is reported of the mating of a worker bee. The question is raised as to whether or not the laying worker has thus first met with the drone. Much yet remains to be learned concerning these abnormal members of the bee community.

— : —

At Iowa State Experiment Station, Dr. O. W. Park has an experiment comparing the races of bees. Caucasians, Italians and Carniolans are kept in equal numbers and under the same conditions. To keep them pure all colonies are frequently requeened with stock from reputable sources.

Although this is the third year of the comparison, Doctor Park is unwilling to express an opinion as to which is the best race. Each has marked peculiarities which distinguish it from the others. Some traits are good and some less desirable. The Caucasians show a marked tendency to propolize and the Carniolans are much inclined to swarming. These traits are already known. It appears that there is no one best race of bees, but each has its champions who appreciate its good qualities and overlook its faults.

— : —

Disease is like fire in that all effort toward control is likely to be wasted unless it is stamped out entirely. Prof. Paddock, Iowa State Apiarist, tells of reducing disease to a very low point in some regions where commercial honey production is carried on. By means of the area clean-up plan, it has been possible to very nearly eradicate it.

Too often, however, some source of reinfection is overlooked and it later reappears. No matter how efficient the inspection, bee diseases have not yet been eliminated entirely from any large area. As far as permanent results are concerned, the disease problem still remains to be solved.

— : —

I have but recently become acquainted with my second grandson who arrived at Ft. Dodge, Iowa, in February. I hope that he approves of his granddad. In looking him over I could not but wonder what direction his bent will lie. Will he be another beekeeper or will he consider that too trifling an occupation for serious consideration?

— : —

There is much encouragement in the fact that we find some people who expected their business to be a failure this season who are, in fact, doing pretty well. Optimism seems to be spreading and, fortunately, it is contagious.

FRANK C. PELLETT.

Meetings and Events

(Continued from page 235)

Weatherford, and Recommending appointment of executive Committee on price regulation to meet at regular intervals during season.

Virginia beekeepers who fail to attend these meetings certainly suffer a loss. If you can't attend, at least send your membership dollar to the Secretary. He will send you "Beekeepers' Item" for a full year free. In addition this dollar pays your membership dues to support the American Honey Institute.

A. D. Hiett.

Washington Legislation

(Special) — Governor Clarence Martin is to be petitioned by the Yakima County Beekeepers' association to approve a bill providing for the standardization of honey, together with regulations of honey, containers and labeling. The bill has passed both houses of the state legislature. The beekeepers are also making efforts to introduce a bill in the legislature asking for the transfer of bee inspection from Washington State college to the department of agriculture, without making a request for an appropriation. A bill asking for inspection appropriation was set aside recently by the legislature. Money on hand in the local association will be used for bee inspection in March.

L. L. Neill.

Honor Roll, American Honey Institute Contributors

(Continued from page 229)

Chas. McKinney, Bagley	3.10
Geo. Jacobson, Kaukauna	3.60
John Kneser, Hales Corners	3.00
Northwestern Bee Association, Menomonie	5.00
Chas. N. Roy, Sparta	2.50
Geo. Jewlin, Merimac	1.00
Cornelius Meyer, Jr., Ballard Road	3.60
S. P. Elliott, Menomonie	3.50
O. P. Dalton, Bruce	3.50
Sauk County Bee Association, Reedsburg	5.00
Paul J. Cypher, Route 3, Box 99, West Bend	.50
Hugo Maeder, West Bend	.50
Holsum Products, Inc., Milwaukee	5.00
R. E. Schoonover, Wilson	1.00
Mildred Young, R. F. D. 4, Box 608, West Allis	.50
G. M. Ranum, Mt. Horeb	3.60
H. A. Schaefer, Osseo	6.00
C. A. Wood, S. Wayne	1.00
Wyoming	
Wm. Mosteller, Box 1570, Casper	$ 5.00
Geo. Krause, Riverton	5.00

One Institute Receiver reports having honey on hand from the following beekeepers which when sold will be credited to memberships:

	Amt. of Honey
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Fred Sievert, Box 101, Porter	60 lbs.
Wisconsin	
E. W. Hansleman, Augusta	60 lbs.
E. A. Duax, Chippewa Falls	15 lbs.
E. W. Puhl, Chippewa Falls	5 lbs.
Geo. Barr, R. F. D. 2, Boyd	10 lbs.
A. J. Mohr, Bloomer	5 lbs.
Walter Bartz, Cornell	10 lbs.
John Duax, Albertville	5 lbs.
Frank Krall, Chippewa Falls	5 lbs.
Aug. Lotz Co., Boyd	10 lbs.

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25 to 49 Packages with Select Queens, Ea.,	**$1.65;**	**Ea., $2.15;**	**Ea., $2.65**
50 and up, Packages with Sel. Queens, Ea.,	**$1.50;**	**Ea., $2.00;**	**Ea., $2.50**

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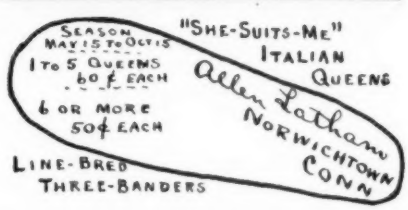

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